Puget Sound Naval Shipyard
National Pollutant Discharge Elimination System

Permit Renewal Application

Permit Number WA-000206-2

1400 Farragut Avenue
Bremerton, WA 98314-5001

DEPARTMENT OF THE NAVY
PUGET SOUND NAVAL SHIPYARD
1400 FARRAGUT AVENUE
BREMERTON, WASHINGTON 98314-5001

IN REPLY REFER TO:
5090.7-5
Ser 106.31/0621
OCT 0 2 1998

Mr. Phil Millam
Director, Water Division
U.S. Environmental Protection Agency
1200 Sixth Avenue, WD-135
Seattle, WA 98101

Dear Mr. Millam:

Puget Sound Naval Shipyard is forwarding enclosure (1), the reapplication for National Pollutant Discharge Elimination System (NPDES) Permit Number WA-000206-2, for existing discharges per Title 40 Code of Federal Regulations Part 122.21.

Included in enclosure (1) are Forms 1, 2C, 2F, supplements 1 through 6, and storm water base maps of the facility.

Questions may be addressed to Mr. Bruce Beckwith, Code 106.31, at telephone number (360) 476-0118.

Sincerely,

R. M. SHIPLEY
Director, Environment, Safety
and Health Office
By direction of the
Shipyard Commander

Encl:
(1) NPDES Permit Renewal Application

Copy to: (w/o encl)
EFA-NW
WDOE
WDOE, NWRO

WA0002206-2

Puget Sound Naval Shipyard

National Pollutant Discharge Elimination System Permit Renewal Application

Table of Contents

FORM 1 GENERAL

U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER

F W A 2 1 7 0 0 2 3 4 1 8 D

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill—in area below. Also, if any of the preprinted data is absent *(the area to the left of the label space lists the information that should appear)*, please provide it in the proper fill—in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI *(except VI-B which must be completed regardless)*. Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

LABEL ITEMS

I. I.D. NUMBER

III. FACILITY NAME

V. FACILITY MAILING ADDRESS

VI. FACILITY LOCATION

PLEASE PLACE LABEL IN THIS SPACE

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold—faced terms.

SPECIFIC QUESTIONS	MARK 'X' YES	MARK 'X' NO	MARK 'X' FORM ATTACHED
A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)		X	
B. Does or will this facility *(either existing or proposed)* include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)		X	
C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)	X		
D. Is this a proposed facility *(other than those described in A or B above)* which will result in a discharge to waters of the U.S.? (FORM 2D)		X	
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)	X		
F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X	
H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	
J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)	X		

III. NAME OF FACILITY

1 SKIP PUGET SOUND NAVAL SHIPYARD

IV. FACILITY CONTACT

A. NAME & TITLE *(last, first, & title)*	B. PHONE *(area code & no.)*
2 CIPRA ROBERT F.	360 476 6009

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX			
3 1400 FARRAGUT AVENUE			
B. CITY OR TOWN	**C. STATE**	**D. ZIP CODE**	
4 BREMERTON	WA	98314	

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER			
5 1400 FARRAGUT AVENUE			
B. COUNTY NAME			
KITSAP			
C. CITY OR TOWN	**D. STATE**	**E. ZIP CODE**	**F. COUNTY CODE (if known)**
6 BREMERTON	WA	98314	

PCS/JC

CONTINUE ON REVERS

CONTINUED FROM THE FRONT

VII. SIC CODES (4-digit, in order of priority)

A. FIRST	B. SECOND
9711 (specify) NATIONAL SECURITY	3731 (specify) SHIP BUILDING AND REPAIR
C. THIRD	**D. FOURTH**
(specify) N/A	(specify) N/A

VIII. OPERATOR INFORMATION

A. NAME

DEPARTMENT OF DEFENSE / NAVY

B. Is the name listed in Item VIII-A also the owner? [X] YES [ ] NO

C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box; if "Other", specify.)

F = FEDERAL; S = STATE; P = PRIVATE; M = PUBLIC (other than federal or state); O = OTHER (specify)

F (specify) N/A

D. PHONE (area code & no.) A 360 476 6009

E. STREET OR P.O. BOX

CODE 106.3 BUILDING 427 ANNEX

F. CITY OR TOWN

BREMERTON

G. STATE WA

H. ZIP CODE 98314

IX. INDIAN LAND

Is the facility located on Indian lands? [ ] YES [X] NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Water)	9 N WA-000206-2	
D. PSD (Air Emissions from Proposed Sources)	9 P PSD-X83-05	
B. UIC (Underground Injection of Fluids)	9 U N/A	
E. OTHER (specify)	9 N/A (specify)	
C. RCRA (Hazardous Wastes)	9 R 2A2170023418	
E. OTHER (specify)	9 N/A (specify)	

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property bounderies. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements.

XII. NATURE OF BUSINESS (provide a brief description)

PUGET SOUND NAVAL SHIPYARD PERFORMS REPAIR, OVERHAUL, CONVERSION, REFURBISHMENT, REFUELING, AND RECYCLING OF NAVY SHIPS AND CRAFTS.

XIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE (type or print)	B. SIGNATURE	C. DATE SIGNED
R. M. SHIPLEY, DIRECTOR ENVIRONMENT, SAFETY AND HEALTH OFFICE	R. M. Shipley	9/30/98

COMMENTS FOR OFFICIAL USE ONLY

C

EPA I.D. NUMBER

WA2170023418

FORM 2C NPDES | EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY
APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER
EXISTING MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURAL OPERATIONS

I. OUTFALL LOCATION

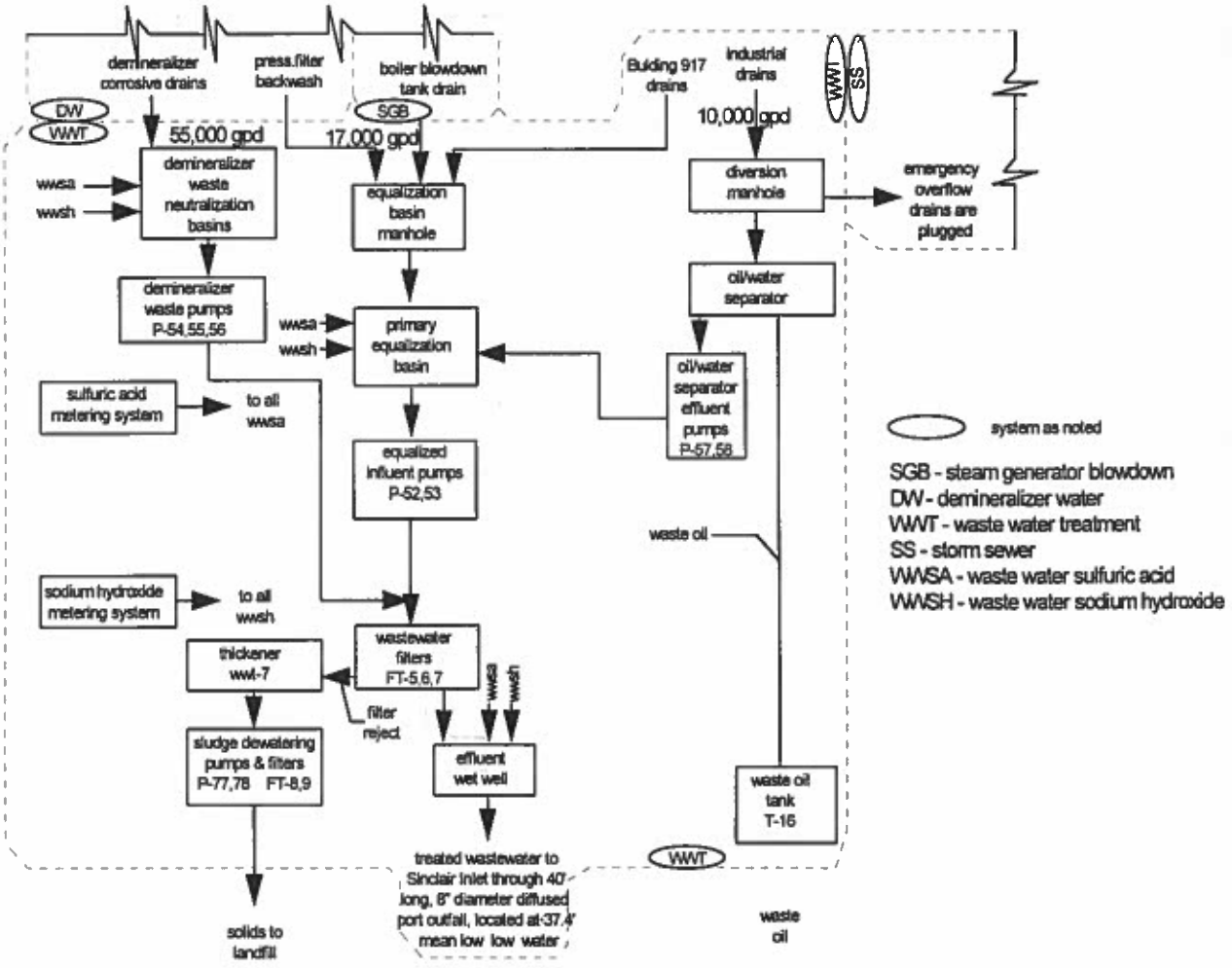
For each outfall, list the latitude and longitude of its location to the nearest 15 seconds and the name of the receiving water.

A. OUTFALL NUMBER (list)	B. LATITUDE			C. LONGITUDE			D. RECEIVING WATER (name)
	1. DEG.	2. MIN.	3. SEC.	1. DEG.	2. MIN.	3. SEC.	
018A	47	33	35	122	38	11	Sinclair Inlet
018B	47	33	36	122	38	10	Sinclair Inlet
019A	47	33	12	122	38	30	Sinclair Inlet
021A	47	33	06	122	39	09	Sinclair Inlet
096A	47	33	37	122	37	56	Sinclair Inlet

II. FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (e.g., for certain mining activities), provide a pictorial description of the nature and amount of any collection or treatment measures.

OUTFALL 021



Long term average flow = 82,000 gpd. Design flow = 380,000 gpd

DRY DOCK BMPS

BMP 2 DRY DOCK CLEANUP

All personnel (or, if applicable, a designated cleanup crew) working in the dry dock, shall collect and properly dispose of wastes, (e.g., wood, plastic, paint chips, discarded construction materials, residual sandblast grit, grinding debris, paper, welding residue, rags, sediments, and insulation) prior to the end of each work shift. Use vacuums or other appropriate equipment for general dry dock floor cleanup.

Do not clean the dry dock floor using wet methods (hosing down) unless you obtained approval in advance from Code 106.3.

Code 106.3 will inspect the dry docks monthly and prior to any flooding to ensure cleanliness.

BMP 3 MATERIALS STORAGE AND HANDLING

Protect containers storing liquid wastes or other liquids, which have the potential of adding pollutants to water (E.G., fuels, paints, and solvents), from the weather in a protected, secure location, and away from drains. Proper protection methods include placing materials inside a cofferdam, inside a covered area, underneath tarps, or using rubber mats over storm drains.

Do not store parts, materials, and containers directly on the pavement, dry dock floor, or ground. If possible, store parts, materials, and containers indoors. If outdoor storage is necessary, protect smaller parts, materials, and containers from the weather and place them on pallets. For outdoor storage of large parts (e.g., hull sections), inspect and clean storage areas, as necessary to control potential pollutants.

Store both spent and virgin sandblast grit under cover. Eliminate contact between process or storm water and sandblast grit.

BMP 4 CONTAINMENT AND CONTROL OF DUST AND OVERSPRAY

Carry out any activity that generates pollutants, (e.g., blasting, painting, metal finishing, welding, grinding) in enclosed, covered areas.

Take applicable measures to adequately contain spent blast grit, paint chips and paint overspray to prevent the discharge of these materials into Sinclair Inlet.

Perform spray paint operations in a manner to contain overspray and spillage, and minimize emission of particulates.

Perform all dry-blasting operations within an enclosure with adequate dust collection, and in accordance with the appropriate Shipyard Industrial Process Instruction. Completely remove spent blast grit from the dry dock floor within 72 hours.

BMP 5 DRIP PANS

Use drip pans or other protective devices at hose connections when transferring oil, fuel, solvent, industrial wastewater, and paint. Where design constraints, vertical connections, or interferences do not allow placement of drip pans, use other measures such as chemical resistant drapes. Where a spill would likely occur, use drip pans or other protective devices when making and breaking connections, or during component removal operations.

Immediately repair, replace, or isolate leaking connections, valves, pipes, and hoses, carrying wastewater, fuel, oil, or other hazardous fluids. As a temporary measure, place drip pans under leaking connections, equipment, or vehicles to collect any leaking fluid.

BMP 7 VEHICLE AND EQUIPMENT PREVENTIVE MAINTENANCE

Inspect all government vehicles and equipment for leaks before use. Maintain them in good condition at all times. Inspect infrequently used vehicles and equipment monthly for leaks. Inspect all equipment and vehicles for fluid leaks before placing them in a dry dock. If equipment in a dry dock is found to be leaking, repair it or remove it from the dry dock immediately . Initiate spill response, as appropriate.

Immediately stop all leaks. As a temporary measure, use drip pans to contain leaking fluids.

BMP 10 TREATED WOOD PRODUCTS

Consider substituting alternate materials for treated wood products. Where feasible, store treated wood, under cover on pallets or indoors, when not in use.

BMP 13 OUTDOOR WORK OPERATIONS

When performing outdoor work operations, have equipment and supplies on-hand to control and cleanup debris. Many outdoor work operations can produce debris which if not controlled can wash into Sinclair Inlet. Some common outdoor work operations of concern are sanding, cutting, grinding, painting, material transfer, and mixing; use of oils, solvents, detergents, and degreasers. Consider the potential risks of your work and prepare accordingly. Items you may need include a spill kit, drop cloths, absorbents, rubber mats, storm drain filters, tape, tarps, brooms, or vacuums.

B. For each outfall, provide a description of: (1) All operations contributing wastewater to the effluent, including process water, sanitary wastewater, cooling water, and storm water runoff; (2) the average flow contributed by each operation; and (3) The treatment received by the wastewater.

1. OUTFALL NO. (list)	2. OPERATION(S) CONTRIBUTING FLOW		3. TREATMENT		
	a. OPERATION (list)	b. AVERAGE FLOW	a. DESCRIPTION	b. LIST CODES FROM TABLE 2C-1	
018A	Non-contact cooling water	0.814 mgd	Gravity settling	1-U	
	Storm water	0.052 mgd			
	Hydrostatic relief water	2.02 mgd			
018B	Steam condensate	0.0576 mgd			
	Caisson leakage/salt water	intermittent			
096	Potable water	0.14 mgd			
	Building 880 foundation drainage	negligible			
019	Non-contact cooling water	1.103 mgd			
	Storm water	0.018 mgd	Gravity settling	1-U	
	Hydrostatic relief water	4.007 mgd			
	Caisson leakage/salt water	intermittent			
	Potable water	0.072 mgd			
	Steam condensate	0.0288 mgd			
021	Process waste water from the				
	steam generation plant	82,000 gpd	Slow sand filtration	1-V	
			Neutralization	2-K	
			Gravity thickening	5-L	

OFFICIAL USE ONLY (effluent guidelines sub-categories)

C. Except for storm runoff, leaks, or spills, are any of the discharges described in Items II-A or B intermittent or seasonal?

■ YES (complete the following table) ☐ NO (go to Section III)

1. Outfall Number	2. Operation(s) Contributing Flow (list)	3. Frequency		4. Flow				
		a. days per week	b. months per year	a. Flow Rate (mgd) 1. Long term Average	a. Flow Rate (mgd) 2. Maximum Daily	b. Total Volume 1. Long term Average	b. Total Volume 2. Maximum Average	c. Duration (days)
018 019 096	Non-contact cooling water increases discharge when ships are in dry dock, the greatest being with aircraft carriers in Dry Dock 6.							
021	Boiler rates vary seasonally, receiving greater use in winter.							

Page Revised

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When performing outdoor work operations, have equipment and supplies on-hand to control and cleanup debris. Many outdoor work operations can produce debris which if not controlled can wash into Sinclair Inlet. Some common outdoor work operations of concern are sanding, cutting, grinding, painting, material transfer, and mixing; use of oils, solvents, detergents, and degreasers. Consider the potential risks of your work and prepare accordingly. Items you may need include a spill kit, drop cloths, absorbents, rubber mats, storm drain filters, tape, tarps, brooms, or vacuums.

B. For each outfall, provide a description of (1) all operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and stormwater runoff; (2) the average flow contributed by each operation; and (3) the treatment received by the wastewater.

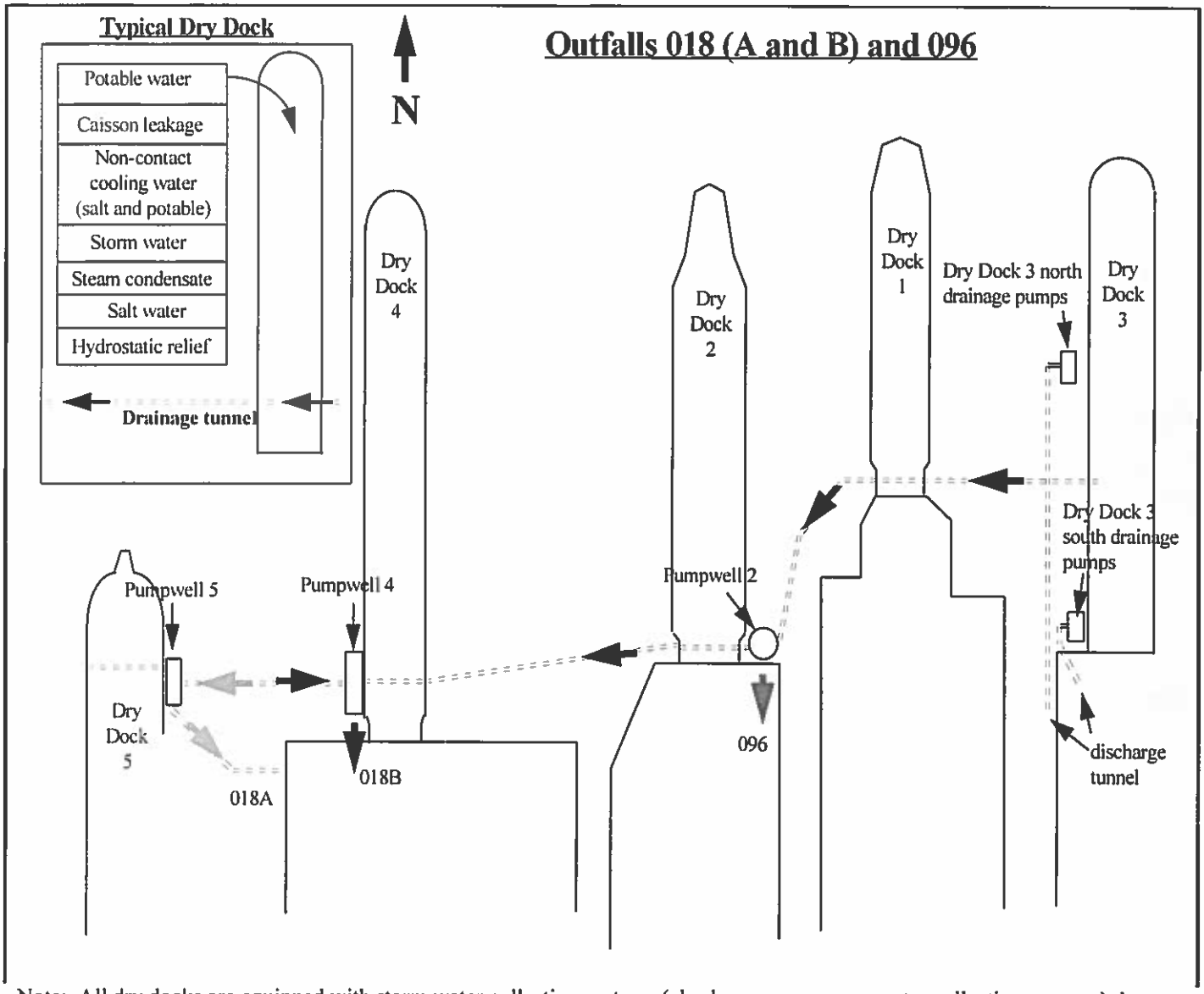
1. Outfall Number	2. Operations Contributing Flow		3. Treatment		
	a. OPERATION *(list)*	b. AVERAGE FLOW	a. DESCRIPTION	b. LIST CODES FROM TABLE 2C-1	
018A 018B 096	Non-contact cooling water	*0.83* mgd	Gravity settling	1-U	
	Storm water	0.052 mgd			
	Hydrostatic relief water	2.02 mgd			
	Steam condensate	0.0576 mgd			
	Caisson leakage/salt water	intermittent			
	Potable water	0.14 mgd			
	Building 880 foundation drainage	negligible			
019	Non-contact cooling water	*1.77* mgd	Gravity settling	1-U	
	Storm water	0.018 mgd			
	Hydrostatic relief water	4.007 mgd			
	Caisson leakage/salt water	intermittent			
	Potable water	0.072 mgd			
	Steam condensate	0.0288 mgd			
021	Process waste water from the steam generation plant	82,000 gpd	Slow sand filtration	1-V	
			Neutralization	2-K	
			Gravity thickening	5-L	

C. Except for storm runoff, leaks, or spills, are any of the discharges described in Items II-A or B intermittent or seasonal?

☒ **YES** *(complete the following table)* ☐ **NO** *(go to Section III)*

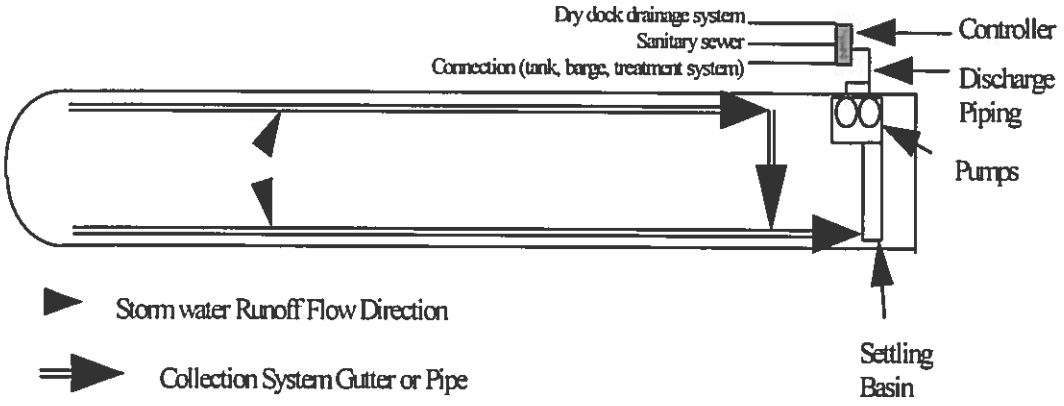
1. OUTFALL NUMBER (list)	2. OPERATION(s) CONTRIBUTING FLOW *(list)*	3. FREQUENCY		4. FLOW				
		a. DAYS PER WEEK *(specify average)*	b. MONTHS PER YEAR *(specify average)*	a. FLOW RATE *(in mgd)*		b. TOTAL VOLUME *(specify with units)*		c. DURATION *(in days)*
				1. LONG TERM AVERAGE	2. MAXIMUM DAILY	1. LONG TERM AVERAGE	2. MAXIMUM DAILY	
018A 018B 019 096	Non-contact cooling water increases dischage when ships are in dry dock, the greatest being with aircraft carriers in Dry Dock 6.							
021	Boiler rates vary seasonally, receiving greater use in winter.							

4/12/02 Replacement



Note: All dry docks are equipped with storm water collection systems (also known as process water collection systems) that divert the first flush of storm water into the sanitary sewer (see sketch below).

Conceptualized Dry Dock Storm Water Collection System



III. PRODUCTION

A. Does effluent guideline limitation promulgated by EPA under Section 304 of the Clean Water Act apply to your facility

☐ YES (complete item III-B) ■ NO (go to Section IV)

Note: While the applicability of the Steam Electric Power Generation effluent guideline does not strictly apply to Outfall 021, it is substantially similar in many respects. Current permit limits are derived from the guideline.

B. Are the limitations in the applicable effluent guideline expressed in terms of production (or other measure of operation)?

☐ YES (complete item III-C) ■ NO (go to Section IV) (See note below)

C. If you answered "yes" to item III-B, list the quantity which represents an actual measurement of your level of production, expressed in the terms and units used in the applicable effluent guideline, and indicate the affected outfalls.

1. AVERAGE DAILY PRODUCTION			2. Affected
a. quantity per day	b. units of measure	c. Operation, product, material, etc. (specify)	Outfalls
N/A			

IV. IMPROVEMENTS

A. Are you now required by any Federal, State or local authority to meet any implementation schedule for the construction, upgrading or operation of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement orders, enforce compliance schedule letters, stipulations, court orders, and grant or loan conditions.

☐ YES (complete the following table) ■ NO (go to Item IV-B)

1. Identification of condition, agreement, etc.	2. Affected outfalls		3. Brief description of project	4. Final compliance date	
	a. no.	b. source of discharge		a. Required	b. Projected

B. OPTIONAL. You may attach additional sheets describing any additional water pollution control programs (or other environmental projects which may affect your discharges) you now have underway or which you plan. Indicate whether each program is now underway or planned, and indicate your actual or planned schedules for construction.

Process water collection systems (PWCS) [See Supplement 3]	018A, 018B, & 096 019	Dry Docks 1, 2, 3, 4, & 5 Dry Dock 6	The storm water collection system* collects and directs first flush storm water to the sanitary sewer, removing the greatest concentrations pollutants, including copper, from the dry dock floor. Floatables and sediments are collected within settling basins, and removed during cleaning operations.	NA	The storm water collection systems* are operational in all dry docks except Dry Dock 2. The anticipated completion date for Dry Dock 2 is 30 Nov 98.

* Also known as the process water collection system (PWCS)

V. INTAKE AND EFFLUENT CHARACTERISTICS

A, B, & C. See instructions before proceeding - complete one set of tables for each outfall - Annotate the outfall number in the space provided. NOTE: Tables V-A, V-B, and V-C are included in the sheets numbered V-1 through V-9.

Note: The analyses of the substances by URS and USGS (listed in Section VIII) was performed greater than three years prior to submittal of this application, however, these results have been included to support why these substances are believed to be present or absent in the Shipyard NPDES discharge.

D. Use the space below to list any of the pollutants listed in Table 2C-3 of the instructions, which you know or have reason to believe is discharged or may be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it to be present and report any analytical data in your possession.

1. POLLUTANT	2. SOURCE	1. POLLUTANT	2. SOURCE
Allyl alcohol	Component of paint used in the Shipyard.	Monoethyl amine	Component of paint used in the Shipyard.
Amyl acetate	"	Monomethyl amine	"
Butyl acetate	"	Strontium	"
Butylamine	"	Triethanolamine	"
Diethyl amine	"	Triethylamine	"
Dimethyl amine	"	Trimethylamine	"
Formaldehyde	"	Xylene	"
Isopropanolamine	"	Vanadium	Component of submarine hulls (released during cutting operations).

The above chemicals are present in paint and could be present due to paint overspray. Analytical data only exists for xylene. Xylene was sampled but not detected in samples taken by URS at Outfalls 018 and 019.

Note: The storm water collection system (also known as the process water collection system) in each dry dock will discharge the first flush of heavy storm water events containing these pollutants to the sanitary sewer. See Supplement 3

VI. POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

Is any pollutant listed in Item V-C a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or byproduct?

■ YES (list all such pollutants below) ☐ NO (go to Item VI-B)

Note: The information provided below was obtained from the Shipyard Hazardous Substance Management System (HSMS) inventory. The substances listed below which are currently used are listed on the Shipyard Authorized Use List (AUL). Substances listed below which are not on the Shipyard AUL, i.e., PCBs, are present in the HSMS due to vessel recycling operations.

antimony, total	1,1-dichloroethane	1,2 - dichlorobenzene
arsenic, total	1,2 - dichloroethane	1,3 - dichlorobenzene
beryllium, total	1,1-dichloroethylene	1,4 - dichlorobenzene
bromide	1,2 - dichloropropane	dimethyl phthalate
cadmium, total	ethylbenzene	Di-N-Butyl Phthalate
chromium, total	methyl chloride	Di-N-Octyl Phthalate
nickel, total	methylene chloride	Fluoranthene
selenium, total	1,1,2,2 -tetrachloroethane	Hexachlorobenzene
silver, total	tetrachloroethylene	Hexachlorobutadiene
thallium, total	toluene	Hexachloroethane
cyanide, total	1,2 - trans-dichloroethylene	Isophorone
phenols, total	1,1,1 - trichloroethane	naphthalene
arcylonitrile	1,1,2 - trichloroethane	Nitrobenzene
benzene	trichloroethylene	N-Nitro-Sodiphenylamine
bromoform	Trichlorofluoromethane	PCB-1242
carbon tetracholride	vinyl chloride	PCB-1254
chlorobenzene	2-chlorophenol	PCB-1221
chlorodibromomethane	pentachlorophenol	PCB- 1232
2 - Chloroethylvinyl Ether	phenol	PCB-1248
chloroform	Bis (2-ethyl hexyl) phthalate	PCB-1260
dichlorobromomethane	butyl benzyl phthalate	PCB-1016
dichlorodifluoromethane		

VII. BIOLOGICAL TOXICITY TESTING

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last 3 years?

■ YES (identify the test(s) and describe their purposes below) ☐ NO (go to Section VIII)

NPDES Form 2C, VII. Biological Toxicity Testing Data.

Prior to issuance of Permit Number WA-000206-2 on April 1, 1994, biomonitoring of Outfall 021 was performed. Tests included 7-day Ceriodaphnia SP (invertebrate) life cycle test, salmonoid bioassay test, and a selanastrum (algal) bioassay tests using 100% effluent on the most sensitive of the organisms. These tests were performed on quarterly basis for the first year of the permitting period and every six months thereafter through the term of the permit. All test results were forwarded to EPA as part of the NPDES permit reporting requirements for the Shipyard.

Technical Information Fact Sheet Public Notice July 23, 1993, Paragraph C. 3. Outfall 021 states, "Whole effluent toxicity monitoring (biomonitoring) of this discharge was also required per condition I.C.3. of the existing permit. Dilution provided by the diffused outfall of this relatively small discharge are designed to be 100:1 receiving water to discharge. This dilution and results of this toxicity monitoring (quarterly for one year) indicate that this discharge is not expected to have adverse impacts on water quality within the authorized mixing zone."

Quarterly from April 1994 and ending June 1995, the Shipyard had analyzed by a contract laboratory (Sound Analytical Services), dry dock drainage (Outfalls 018 A and B, 019A, and 096A) samples for whole effluent toxicity as well as metals analysis. The sampling and analysis was a requirement of NPDES Permit Number WA-000206-2, issued on April 1, 1994.

Acute test for Mysidopsis bahia (mysid shrimp) and chronic test for Crassostrea gigas (pacific oyster), collected June 21 - June 22, 1994, at Outfalls 018 and 019:

	% Effluent Outfall 018	
Evaluation	C. gigas	M. bahia
EC50	>70%	N/A
LC50	N/A	>100%
NOEC	>70%	>100%
LOEC	>70%	>100%

	% Effluent Outfall 019	
Evaluation	C. gigas	M. bahia
EC50	>70%	N/A
LC50	N/A	>100%
NOEC	17.5%	>100%
LOEC	35%	>100%

Metals and PCB analysis collected June 21 - June 22, 1994, at Outfalls 018 and 019:

	Cu	Pb	Zn	Hg	PCB
Outfall 018 in (µg/L)	19	0	30	0	<1.0
Outfall 019	23	0	25	0	<1.0

Acute test for Mysidopsis bahia (mysid shrimp), and chronic test for Crassostrea gigas (pacific oyster), collected September 27 - September 28, 1994, at Outfalls 018 and 019:

	% Effluent Outfall 018	
Evaluation	C. gigas	M. bahia
EC50	>70%	N/A
LC50	N/A	>100%
NOEC	70%	100%
LOEC	>70%	>100%

	% Effluent Outfall 019	
Evaluation	C. gigas	M. bahia
EC50	>70%	N/A
LC50	N/A	>100%
NOEC	70%	100%
LOEC	>70%	>100%

Metals and PCB analysis collected September 27 - September 28, 1994, at Outfalls 018 and 019:

	Cu	Pb	Zn	Hg	PCB
Outfall 018 in (µg/L)	<10	<5	<20	<0.2	<1.0
Outfall 019	<10	<5	<20	<0.2	<1.0

Acute test for Mysidopsis bahia (mysid shrimp), and chronic test for Mytilus edulis (bay mussel), collected December 6 - December 7, 1994, at Outfalls 018, 019, and 096:

	% Effluent Outfall 096	
Evaluation	M. edulis	M. bahia
EC50	>70%	N/A
LC50	N/A	>100%
NOEC	70%	100%
LOEC	>70%	>100%

	% Effluent Outfall 018	
Evaluation	M. edulis	M. bahia
EC50	>70%	N/A
LC50	N/A	>100%
NOEC	70%	100%
LOEC	>70%	>100%

	% Effluent Outfall 019	
Evaluation	M. edulis	M. bahia
EC50	>70%	N/A
LC50	N/A	>100%
NOEC	70%	100%
LOEC	>70%	>100%

Metals analysis collected December 6 - December 7, 1994, at Outfalls 018, 019, and 096:

	Cu	Pb	Zn	Hg
Outfall 018 in (µg/L)	<10	<5	<20	<0.2
Outfall 019	<10	<5	<20	<0.2
Outfall 096	12	<5	<20	<0.2

Acute test for Mysidopsis bahia (mysid shrimp), and chronic test for Strongylocentrotus purpuratus (purple sea urchin), collected February 7 - February 8, 1995, at Outfalls 018, 019 and 096:

	% Effluent Outfall 096	
Evaluation	S. purpuratus	M. bahia
EC50	>70%	N/A
LC50	N/A	>100%
TU (Toxic Units)	<1.43	<1.00
NOEC	70%	100%
LOEC	>70%	>100%

	% Effluent Outfall 018	
Evaluation	S. purpuratus	M. bahia
EC50	>70%	N/A
LC50	N/A	>100%
TU (Toxic Units)	<1.43	<1.00
NOEC	70%	100%
LOEC	>70%	>100%

	% Effluent Outfall 019	
Evaluation	S. purpuratus	M. bahia
EC50	>70%	N/A
LC50	N/A	>100%
TU (Toxic Units)	<1.43	<1.00
NOEC	70%	100%
LOEC	>70%	>100%

N/A = Not applicable

Metals analysis collected February 7 - February 8, 1995, at Outfalls 018, 019 and 096:

	Cu	Pb	Zn	Hg
Outfall 018 in (µg/L)	<10	<5	<20	<0.2
Outfall 019	<10	<5	<20	<0.2
Outfall 096	11	<5	<20	<0.2

Biomonitoring of Shipyard effluent was performed from May 1997 through September 1997. Copper and zinc analysis was also performed on the collected effluent.

No discharges were made from Outfall 096 during this sampling period. The following schedule shows sampling dates:
Acute test for Menidia beryllina (silverside minnow) and chronic test for Dendraster excentricus (sand dollar), collected May 21 - May 22, 1997, at Outfalls 018 and 019:

	% Effluent Outfall 018	
Evaluation	D. excentricus	M. beryllina
EC50	>68%	N/A
LC50	N/A	>100%
NOEC	68%	N/A
LOEC	>68%	N/A
IC25	>68%	N/A

	% Effluent Outfall 019	
Evaluation	D. excentricus	M. beryllina
EC50	>68%	N/A
LC50	N/A	>100%
NOEC	68%	N/A
LOEC	>68%	N/A
IC25	>68%	N/A

Metals analysis collected May 21 - May 22, 1997, at Outfalls 018 and 019:

	Cu	Zn
Outfall 018 in (µg/L)	8	25
Outfall 019	83	58

Acute test for Menidia beryllina (silverside minnow) and chronic test for Dendraster excentricus (sand dollar), collected June 2 - June 3, 1997, at Outfalls 018 and 019:

	% Effluent Outfall 018	
Evaluation	D. excentricus	M. beryllina
EC50	>68%	N/A
LC50	N/A	>100%
NOEC	68%	N/A
LOEC	>68%	N/A
IC25	>68%	N/A

	% Effluent Outfall 019	
Evaluation	D. excentricus	M. beryllina
EC50	>68%	N/A
LC50	N/A	>100%
NOEC	68%	N/A
LOEC	>68%	N/A
IC25	>68%	N/A

Metals analysis collected June 2 - June 3, 1997, at Outfalls 018 and 019:

	Cu	Zn
Outfall 018 in (µg/L)	15	29
Outfall 019	<10	22

Acute test for Menidia beryllina (silverside minnow) and chronic test for Dendraster excentricus (sand dollar), collected June 16 - June 17, 1997, at Outfalls 018 and 019:

	% Effluent Outfall 018	
Evaluation	D. excentricus	M. beryllina
EC50	>68%	N/A
LC50	N/A	>100%
NOEC	68%	N/A
LOEC	>68%	N/A
IC25	>68%	N/A

	% Effluent Outfall 019	
Evaluation	D. excentricus	M. beryllina
EC50	40.9%	N/A
LC50	N/A	>100%
NOEC	9%	N/A
LOEC	18%	N/A
IC25	31.4%	N/A

Metals analysis collected June 16 - June 17, 1997, at Outfalls 018 and 019:

	Cu	Zn
Outfall 018 in (µg/L)	16	27
Outfall 019	9	58

Acute test for Menidia beryllina (silverside minnow) and chronic test for Dendraster excentricus (sand dollar), collected July 21 - July 22, 1997, at Outfalls 018 and 019:

	% Effluent Outfall 018	
Evaluation	D. excentricus	M. beryllina
EC50	>68%	N/A
LC50	N/A	>100%
NOEC	68%	N/A
LOEC	>68%	N/A
IC25	>68%	N/A

	% Effluent Outfall 019	
Evaluation	D. excentricus	M. beryllina
EC50	>68%	N/A
LC50	N/A	>100%
NOEC	68%	N/A
LOEC	>68%	N/A
IC25	>68%	N/A

Metals analysis collected July 21 - July 22 1997, at Outfalls 018 and 019:

	Cu	Zn
Outfall 018 in (µg/L)	95	68
Outfall 019	8	9

Acute test for Menidia beryllina (silverside minnow) and chronic test for Dendraster excentricus (sand dollar), collected July 28 - July 29, 1997, at Outfalls 018 and 019:

	% Effluent Outfall 018	
Evaluation	D. excentricus	M. beryllina
EC50	>68%	N/A
LC50	N/A	>100%
NOEC	68%	N/A
LOEC	>68%	N/A
IC25	>68%	N/A

	% Effluent Outfall 019	
Evaluation	D. excentricus	M. beryllina
EC50	>68%	N/A
LC50	N/A	>100%
NOEC	68%	N/A
LOEC	>68%	N/A
IC25	>68%	N/A

Metals analysis collected July 28 - July 29, 1997, at Outfalls 018 and 019:

	Cu	Zn
Outfall 018 in (µg/L)	7	19
Outfall 019	8	11

Acute test for Menidia beryllina (silverside minnow) and chronic test for Dendraster excentricus (sand dollar), collected Aug 11 - Aug 12, 1997, at Outfalls 018 and 019:

	% Effluent Outfall 018	
Evaluation	D. excentricus	M. beryllina
EC50	>68%	N/A
LC50	N/A	>100%
NOEC	68%	N/A
LOEC	>68%	N/A
IC25	>68%	N/A

	% Effluent Outfall 019	
Evaluation	D. excentricus	M. beryllina
EC50	>68%	N/A
LC50	N/A	>100%
NOEC	68%	N/A
LOEC	>68%	N/A
IC25	>68%	N/A

Metals analysis collected Aug 11- Aug 12, 1997, at Outfalls 018 and 019:

	Cu	Zn
Outfall 018 in (µg/L)	550	320
Outfall 019	<5	7

Acute test for Menidia beryllina (silverside minnow) and chronic test for Dendraster excentricus (sand dollar), collected Aug 25 - Aug 26, 1997, at Outfalls 018 and 019:

	% Effluent Outfall 018	
Evaluation	D. excentricus	M. beryllina
EC50	>68.0%	N/A
LC50	N/A	>100%
NOEC	68.0%	N/A
LOEC	>68.0%	N/A
IC25	>68.0%	N/A

	% Effluent Outfall 019	
Evaluation	D. excentricus	M. beryllina
EC50	>68.0%	N/A
LC50	N/A	>100%
NOEC	68.0%	N/A
LOEC	>68.0%	N/A
IC25	>68.0%	N/A

Metals analysis collected Aug 25 - Aug 26, 1997, at Outfalls 018 and 019:

	Cu	Zn
Outfall 018 in (µg/L)	15	30
Outfall 019	32	31

Acute test for Menidia beryllina (silverside minnow) and chronic test for Dendraster excentricus (sand dollar), collected Sept 8 - Sept 9, 1997, at Outfalls 018 and 019:

	% Effluent Outfall 018	
Evaluation	D. excentricus	M. beryllina
EC50	>68.0%	N/A
LC50	N/A	>100%
NOEC	68.0%	N/A
LOEC	>68.0%	N/A
IC25	>68.0%	N/A

	% Effluent Outfall 019	
Evaluation	D. excentricus	M. beryllina
EC50	>68%	N/A
LC50	N/A	>100%
NOEC	68%	N/A
LOEC	>68%	N/A
IC25	>68%	N/A

Metals analysis collected Sept 8 - Sept 9, 1997, at Outfalls 018 and 019:

	Cu	Zn
Outfall 018 in (µg/L)	7.8	17
Outfall 019	7.3	19

Acute test for Menidia beryllina (silverside minnow) and chronic test for Dendraster excentricus (sand dollar), collected Sept 22 - Sept 23, 1997, at Outfalls 018 and 019:

	% Effluent Outfall 018	
Evaluation	D. excentricus	M. beryllina
EC50	67.6%	N/A
LC50	N/A	>100%
NOEC	18.0%	N/A
LOEC	35.0%	N/A
IC25	42.3%	N/A

	% Effluent Outfall 019	
Evaluation	D. excentricus	M. beryllina
EC50	>68%	N/A
LC50	N/A	>100%
NOEC	35%	N/A
LOEC	68%	N/A
IC25	>68%	N/A

Metals analysis collected Sept 22 - Sept 23, 1997, at Outfalls 018 and 019:

	Cu	Zn
Outfall 018 in (µg/L)	7.0	19
Outfall 019	10	9

VIII. CONTRACT ANALYSIS INFORMATION

Were any of the analysis reported in Item V performed by a contract laboratory or consulting firm?

■ YES (list the name, address, and telephone number of, and pollutants analyzed by, each such laboratory of firm below) ☐ NO (go to Section IX)

A. name	B. address	C. telephone (area code & no.)	D. pollutants analyzed (list)
USGS Report 95-361	District Chief U.S. Geological Survey 1201 Pacific Ave., Suite 600 Tacoma, WA 98402		Volatile compounds and base/neutral compounds.
URS Consultants, Inc.	1100 Olive Way, Suite 200 Seattle, WA 98101-1832	(206) 623-1800	Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Iron, Manganese, Magnesium, Mercury, Nickel, Selenium, Silver, Thallium, acid compounds, and pesticides.
PSNS Code 134	Navshipyd Puget Sound 1400 Farragut Ave. Bremerton, WA 98314-5001	(360) 476-8090	Asbestos, Aniline, TOC, TSS, Ammonia, Flow, Temperature, pH, Oil and Grease, PCBs, and total recoverable Lead, Mercury, Zinc, and Copper
Laucks Testing Laboratories, Inc. Toxicity testing was performed by: NAS Associates, Inc.	940 South Harney St. Seattle, WA 98108 P.O. Box 1437 Newport, Oregon 97365	(206) 767-5060 (541) 265-7225	BOD and COD

IX. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. Name & Official Title	B. Phone No. (area code & no.)
G. M. SHERRELL, HEAD, ENVIRONMENTAL DIVISION ENVIRONMENT, SAFETY AND HEALTH OFFICE, "ACTING"	(360) 476-6009
C. Signature	D. Date Signed 9/30/98

EPA I.D. NUMBER: WA2170023418

V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO: 018A & B

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall.

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	3. UNITS a. CONCENTRATION	b. MASS	4. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES
a. Biochemical Oxygen Demand (BOD)	< 5.0	N/A					1	mg/L		See Supplement 5		
b. Chemical Oxygen Demand (COD)	ND[A]	N/A					1	mg/L				
c. Total Organic Carbon (TOC)	6.2	155.2[B]			1.87	46.8[B]	14	mg/L	lbs/day			
d. Total Suspended Solids (TSS)	11	N/A					1	mg/L				
e. Ammonia (as N)	0.69	17.3[B]			0.27	6.8[B]	17	mg/L	lbs/day			
f. Flow	VALUE 5.61		VALUE 4.8		VALUE 3.0[C]		104	mgd		VALUE		
g. Temperature (winter)	VALUE		VALUE 13.1		VALUE 11.5		11	°C		VALUE		
h. Temperature (summer)	VALUE		VALUE 14.4		VALUE 13.2		10	°C		VALUE		
i. pH	MINIMUM 7.6[D]	MAXIMUM 7.6[D]					1	STANDARD UNITS				

Notes:

A Chloride analysis (Method 325.2) results of this sample were 9000 mg/L. Analysis Method 410.3 was used for COD .

B All loading (mass) values are based on the long term average flow value.

C This number reflects the Shipyards discharges from Dry Docks 1 through 5 during times Pumpwell 2 was operating. The long term average of total discharges from Dry Docks 1 through 5 includes this number plus the long term average of Outfall 096.

D This discharge was sampled only once for pH.

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Compare one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X" a. BELIEVED PRESENT	b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (1) CONCENTRATION	(2) MASS	d. NO OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE	b. NO. OF ANALYSES
a. Bromide (24959-67-9)		X										See Supplement 5	
b Chlorine, Total Residual	X[A]												
c. Color		X											
d. Fecal Coliform		X											
e. Fluoride (1698-48-8)		X											
f. Nitrate-Nitrite (as N)		X											
g. Nitrogen, Total Organic (as N)	X[B]												
h. Oil and Grease		X	ND		ND		ND		109	<5 mg/L			
i. Phosphorus (as P), Total (7723-14-0)	X[B]												
j. Radioactivity													
(1) Alpha, Total		X											
(2) Beta, Total		X											
(3) Radium, Total		X											
(4) Radium 226, Total		X											
k. Sulfate (as SO_4) (14808-79-8)		X											

Page Revised

EPA I.D. NUMBER: WA2170023418

V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 018A & B

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall.

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	3. UNITS a. CONCENTRATION	b. MASS	4. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES
a. Biochemical Oxygen Demand (BOD)	< 5.0	N/A					1	mg/L		See Supplement 5		
b. Chemical Oxygen Demand (COD)	760.0[A]	N/A					1	mg/L				
c. Total Organic Carbon (TOC)	6.2	155.2[B]			1.87	46.8[B]	14	mg/L	lbs/day			
d. Total Suspended Solids (TSS)	11	N/A					1	mg/L				
e. Ammonia (as N)	0.69	17.3[B]			0.27	6.8[B]	17	mg/L	lbs/day			
f. Flow	VALUE 5.9		VALUE 5.5		VALUE 3.0[C]		104	mgd		VALUE		
g. Temperature (winter)	VALUE		VALUE 13.1		VALUE 11.5		11	°C		VALUE		
h. Temperature (summer)	VALUE		VALUE 14.4		VALUE 13.2		10	°C		VALUE		
i. pH	MINIMUM 7.6[D]	MAXIMUM 7.6[D]					1	STANDARD UNITS				

Notes:

[A] Chloride analysis (Method 325.3) results of this sample were 8700 mg/L. Analysis Method 410.4 was used for COD.

[B] All loading (mass) values are based on the long term average flow value.

[C] This number reflects the Shipyards discharges from Dry Docks 1 through 5 *minus the discharges from Pumpwell 2 (Outfall 096).*

[D] This discharge was sampled only once for pH.

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Compare one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X" a. BELIEVED PRESENT	b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (1) CONCENTRATION	(2) MASS	d. NO OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE	b. NO. OF ANALYSES
a. Bromide (24959-67-9)		X										See Supplement 5	
b Chlorine, Total Residual	X[A]												
c. Color		X											
d. Fecal Coliform		X											
e. Fluoride (1698-48-8)		X											
f. Nitrate-Nitrite (as N)		X											
g. Nitrogen, Total Organic (as N)	X[B]												
h. Oil and Grease		X	ND		ND		ND		109	<5 mg/L			
i. Phosphorus (as P), Total (7723-14-0)	X[B]												
j. Radioactivity													
(1) Alpha, Total		X											
(2) Beta, Total		X											
(3) Radium, Total		X											
(4) Radium 226, Total		X											
k. Sulfate (as SO_4) (14808-79-8)		X											

4/12/02 Replacement

l. Sulfide (as S)	X[C]														
m. Sulfite (as SO) (14265-45-3)		X													
n. Surfacants		X													
o. Aluminum, Total (7429-90-5)	X		139							1	µg/L				
p. Barium, Total (7440-39-3)	X		48 3							1	µg/L				
q. Boron, Total (7440-42-8)		X													
r. Cobalt, Total (7440-48-4)		X	ND							1	<10 0 µg/L				
s. Iron, Total (7439-89-6)	X		967							1	µg/L				
t. Magnesium, Total (7439-95-4)	X		604,000							1	µg/L				
u. Molybdenum, Total (7439-98-7)	X[D]														
v. Manganese, Total (7439-96-5)	X		297							1	µg/L				
w. Tin, Total (7440-31-5)	X[D]														
x. Titanium, Total (7440-32-6)	X[D]														

Notes:

A Chlorine is present in discharges of potable water, non-contact cooling water, and freeze protection water.

B Nitrate-Nitrite and Phosphorus are present in surface waters which enter the dry dock s through hydrostatic relief and caisson leakage. See Supplement 5.

C Hydrogen sulfide odors present in Dry Dock 3 are presumed to be IR related.

D These potential pollutants are constituents of HY80 steel, of which Navy vessel hulls are constructed. HY80, per military specifications, contains the following maximum metals concentrations: tin - 0.03%, molybdenum - 0.63%, and titanium - 0.02%. These hulls are currently being cut up for disposal/recycling. During rainfall, cutting debris which could contain these metals, could enter the dry dock drainage system. The new storm water collection systems (also known as process water collection systems) redirect the first flush of storm water runoff so it will not reach the NPDES outfall (see Supplement 3).

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a (secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2,4 dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table (all 7 pages) for each outfall. See instructions for additional details and requirements.

POLLUTANT AND CAS NO. (if available)	2. MARK "X" a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO OF ANALYSES	4. UNITS a. CONCEN-TRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)			X	ND						1	<2.5 µg/L		See Supplement 5		
2M. Arsenic, Total (7440-38-2)		X		3.4						1	µg/L				
3M. Beryllium, Total (7440-41-7)			X	ND						1	<1.0 µg/L				
4M. Cadmium, Total (7440-43-0)		X		ND						1	<2.5 µg/L				
5M. Chromium, Total (7440-47-3)			X	ND						1	<10.0 µg/L				
6M. Copper, Total recoverable (7440-50-8)	X	X		680	17.0	118	2.95	19.8	0.5	113	µg/L	lbs/day			
7M. Lead, Total (7439-92-1)		X		17	0.43			ND		27	µg/L	lbs/day			
8M. Mercury, Total (7439-97-6)		X		0.46	0.01			ND		13	<0.2 µg/L	lbs/day			

Don't know what from

9M. Nickel, Tot (7440-22-4)		X[A]		ND						1	<7.9 µg/L				
10M. Selenium, Total (7782-49-2)			X	ND						1	<0.5 µg/L				
11M. Silver, Total (7440-22-4)			X	ND						1	<2.5 µg/L				
12M. Thallium, Total (7440-28-0)			X	ND						1	<2.5 µg/L				
13M. Zinc, Total recoverable (7440-66-6)		X		45	1.13			ND		13	<20 µg/L	lbs/day			
14M. Cyanide, Total (57-12-5)			X												
15M. Phenols, Total			X												

Notes:

[A] Nickel is a constituent of HY80 steel, of which Navy vessel hulls are constructed. HY80, per military specifications, contains a maximum nickel concentration 0f 4%. These hulls are currently being cut up for disposal/recycling as well as copper-nickel alloy piping. During rainfall, cutting debris which could contain nickel, could enter the dry dock drainage system. The new storm water collection systems (also known as process water collection systems) redirect the first flush of storm water runoff so it will not reach the NPDES outfall (see Supplement 3).

DIOXIN																
2,3,7,8-Tetra-Chlorodibenzo-P-Dioxin (1764-01-6)			X	DESCRIBE RESULTS												
GC/MS FRACTION - VOLATILE COMPOUNDS																
1V. Acrolein (107-02-8)			X	ND						1	µg/L[B]				
2V. Acrylonitrile (107-13-1)			X	ND						1	µg/L[B]				
3 V. Benzene (71-43-2)			X	ND						2	<0.5 µg/L				
4V. Bis (Chloro-methyl) Ether (542-88-1)			X												
5V. Bromoform (75-25-2)		X		0.4 (USGS)						2	<0.2 µg/L				
6V. Carbon Tetra-chloride (56-23-5)			X							2					
7V. Chlorobenzene (108-90-7)			X	ND						2	<0.2 µg/L				
8V. Chlorodibromo-methane (124-48-1)			X												
9V. Chloroethane (75-00-3)			X	ND						2	<0.2 µg/L				
10V. 2-Chloroethylvinyl Ether (110-75-8)			X	ND						1	<1.0 µg/L				
11V. Chloroform (67-66-3)		X		2.4 (USGS)						2	µg/L				
12V. Dichlorobromo-methane (75-27-4)		X		0.2 (USGS)						2	µg/L				
13V. Dichlorodifluoro-methane (75-71-8)			X	ND						1	<0.2 µg/L				
14V. 1,1 Dichloro-ethane (75-34-3)		X		^						2	<0.2 µg/L				
15V. 1,2 Dichloro-ethane (107-06-2)			X	ND						2	<0.2 µg/L				
16V. 1,1 Dichloro-ethylene (75-35-4)		X		^						2	<0.2 µg/L				
17V. 1,2 Dichloro-propane (78-87-5)		X		^						2	<0.2 µg/L				
18V. 1,3 Dichloro-propylene (542-75-6)			X												

19V. Ethylbenzene (100-41-4)			X	ND						2	<0.2 µg/L					
20V. Methyl Bromide (74-83-9)			X	ND						2	<0.2 µg/L					
21V. Methyl Chloride (74-87-3)			X	ND						2	<0.2 µg/L					
22V. Methylene Chloride (75-09-2)			X	ND						2	<0.2 µg/L					
23V. 1,1,2,2-Tetra-chloroethane (79-34-5)			X	ND						2	<2.0 µg/L					
24V. Tetrachloro-ethylene (127-18-4)		X		0.9 (USGS)						2	µg/L					
25V. Toluene (108-88-3)			X	ND						2	<0.2 µg/L					
26V. 1,2-Trans-Dichloroethylene (156-60-5)			X	ND						2	<0.2 µg/L					
27V. 1,1,1-Trichloroethane (71-55-6)		X		[A]						2	<0.2 µg/L					
28V. 1,1,2-Trichloroethane (79-00-5)			X	ND						2	<0.2 µg/L					
29V. Trichloro-ethylene (79-01-6)		X		1.9 (USGS)						2	µg/L					
30V. Trichloro-fluoromethane (75-69-4)			X	ND						1	<0.2 µg/L					
31V. Vinyl Chloride (75-01-4)			X	ND						2	<0.2 µg/L					
Notes: [A] Positive results for this pollutant were found in dry dock drainage samples taken by USGS. This pollutant was not detected at the outfall. [B] Minimum detection limits for these compounds were not given in the USGS report.																
GC/MS FRACTIONS - ACID COMPOUNDS																
1A. 2-Chlorophenol (95-57-8)			X	ND						1	<1.0 µg/L					
2A. 2,4-Dichloro-phenol (120-83-2)			X	ND						1	<2.0 µg/L					
3A. 2,4 -Dimethyl-phenol (105-67-9)			X	ND						1	<2.0 µg/L					
4A. 4,6-Dinitro-O-cresol (534-52-1)			X	ND						1	<5.0 µg/L					
5A. 2,4-Dinitro-phenol (51-28-5)			X	ND						1	<10.0 µg/L					
6A. 2-Nitrophenol (88-75-5)			X	ND						1	<2.0 µg/L					
7A. 4-Nitrophenol (100-02-7)			X	ND						1	<10.0 µg/L					
8A. P-Chloro-M-Cresol (59-50-7)			X	ND						1	<2.0 µg/L					
9A. Pentachloro phenol (87-86-5)			X	ND						1	<10.0 µg/L					
10A. Phenol (108-95-2)			X	ND						1	<1.0 µg/L					
11A. 2,4,6-Tri-chlorophenol (88-06-2)			X	ND						1	<10.0 µg/L					
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS																
1B. Acenapthene (83-32-9)			X	ND						2	<1.0 µg/L					

2B. Acenaphtyl: (208-96-8)			X	ND						2	<1.0 µg/L					
3B. Anthracene (120-12-7)			X	ND						2	<1.0 µg/L					
4B. Benzidine (92-87-5)			X													
5B. Benzo *(a)* Anthracene (56-55-3)			X	ND						2	<1.0 µg/L					
6B. Benzo *(a)* Pyrene (50-32-8)			X	ND						2	<1.0 µg/L					
7B. 3,4-Benzoflour-anthene (205-99-2)			X	ND						2	<1.0 µg/L					
8B. Benzo *(ghi)* Perylene (191-24-2)			X	ND						2	<1.0 µg/L					
9B. Benzo *(k)* Fluoranthene (205-99-2)			X	ND						2	<1.0 µg/L					
10B. Bis *(2-Chloro-ethoxy)* Methane (111-91-1)			X	ND						2	<1.0 µg/L					
11B. Bis *(2-Chloro--ethyl)* Ether (111-44-4)			X	ND						2	<1.0 µg/L					
12B. Bis *(2-Chloro-isopropyl)* Ether (108-60-1)			X	ND						2	<1.0 µg/L					
13B. Bis *(2-Ethyl-hexyl)* Phthalate (117-81-7)			X	ND						2	<1.0 µg/L					
14B. 4-Bromo-phenyl Phenyl Ether (101-55-3)			X	ND						2	<2.0 µg/L					
15B. Butyl Benzyl Phthalate (85-86-7)			X	ND						2	<1.0 µg/L					
16B. 2-Chloro-naphthalene (91-58-7)			X	ND						2	<1.0 µg/L					
17B. 4-Chloro-phenyl Phenyl Ether (7005-72-3)			X	ND						2	<1.0 µg/L					
18B. Chrysene (218-01-9)			X	ND						2	<1.0 µg/L					
19B. Dibenzo *(a,h)* Anthracene (53-70-3)			X	ND						2	<1.0 µg/L					
20B. 1,2-Dichloro-benzene (95-50-1)			X	ND						1	<5.0 µg/L					
21B. 1,3 Dichloro-benzene (541-73-1)			X	ND						1	<5.0 µg/L					
22B. 1,4-Dichloro-benzene (106-46-7)			X	ND						1	<5.0 µg/L					
23B. 3,3'-Dichloro-benzidine (91-94-1)			X	ND						1	<5.0 µg/L					
24B. Diethyl Phthalate (84-66-2)			X	ND						2	<1.0 µg/L					
25B. Dimethyl Phthalate (131-11-3)			X	ND						2	<1.0 µg/L					
26B. Di-N- Butyl Phthalate (84-74-2)			X	ND						2	<1.0 µg/L					

27B. 2,4-Dinitro-toluene (606-20-2)			X	ND						2	<2.0 µg/L					
28B. 2,6-Dinitro-toluene (121-14-2)			X	ND						2	<2.0 µg/L					
29B. Di-N-Octyl Phthalate (117-84-0)			X	ND						2	<1.0 µg/L					
30B. 1,2-Diphenyl-hydrazine *(as Aza-benzene)* (122-66-7)			X													
31B. Fluoranthene (206-44-0)			X	ND						2	<1.0 µg/L					
32B. Fluorene (86-73-7)			X	ND						2	<1.0 µg/L					
33B. Hexachloro-benzene (118-74-1)			X	ND						2	<5.0 µg/L					
34B. Hexachloro-butadiene (87-68-3)			X	ND						2	<2.0 µg/L					
35B. Hexachloro-cyclopentadiene (77-47-4)			X	ND						2	<5.0 µg/L					
36B. Hexachloro-ethane (67-72-1)			X	ND						2	<2.0 µg/L					
37B. Indeno *(1,2,3-cd)* Pyrene (193-39-5)			X	ND						2	<1.0 µg/L					
38B. Isophorone (78-59-1)			X	ND						2	<1.0 µg/L					
39B. Naphthalene (91-20-3)			X	ND						2	<1.0 g/L					
40B. Nitrobenzene (98-95-3)			X	ND						2	<1.0 µg/L					
41B. N-Nitrosodi-methylamine (62-75-9)			X	ND						1	<5.0 µg/L					
42B. N-Nitrosodi-N-Propylamine (621-64-7)			X	ND						2	<2.0 µg/L					
43B. N-Nitrosodi-diphenylamine (86-30-6)			X	ND						2	<2.0 µg/L					
44B. Phenanthrene (85-01-8)			X	ND						2	<1.0 µg/L					
45B. Pyrene (129-00-0)			X	ND						2	<1.0 µg/L					
46B. 1,2,4-Trichlorobenzene (120-82-1)			X	ND						2	<1.0 µg/L					
GC/MS FRACTION - PESTICIDES																
1P. Aldrin (309-00-2)			X	ND						1	<0.01 µg/L					
2P. α-BHC (319-85-7)			X	ND						1	<0.01 µg/L					
3P. β-BHC (319-85-7)			X	ND						1	<0.01 µg/L					
4P. γ-BHC (58-89-9)			X	ND						1	<0.01 µg/L					
5P. δ-BHC (319-86-8)			X	ND						1	<0.01 µg/L					

6P. Chlordane (57-74-9)			X												
7P. 4,4'-DDT (50-29-3)			X	ND						1	<0.02 µg/L				
8P. 4,4'-DDE (72-55-9)			X	ND						1	<0.02 µg/L				
9P. 4,4'-DDD (72-54-8)			X	ND						1	<0.02 µg/L				
10P. Dieldrin (60-57-1)			X	ND						1	<0.02 µg/L				
11P. α-Endosulfan (115-29-7)			X												
12P. β-Endosulfan (115-29-7)			X												
13P. Endosulfan Sulfate (1031-07-8)			X	ND						1	<0.02 µg/L				
14P. Endrin (72-20-8)			X	ND						1	<0.02 µg/L				
15P. Endrin Aldenhyde (7421-93-4)			X	ND						1	<0.02 µg/L				
16P. Heptachlor (76-44-8)			X	ND						1	<1.0 µg/L				
17P. Heptachlor Epoxide (1024-57-3)			X	ND						1	<1.0 µg/L				
18P. PCB-1242 (53469-21-9)			X	ND						26	<1.0 µg/L				
19P. PCB-1254 (11097-69-1)			X	ND						26	<1.0 µg/L				
20P. PCB-1221 (11104-28-2)			X	ND						26	<1.0 µg/L				
21P. PCB-1232 (11141-16-5)			X	ND						26	<1.0 µg/L				
22P. PCB-1248 (12672-29-6)			X	ND						26	<1.0 µg/L				
23P. PCB-1260 (11096-82-5)			X	ND						26	<1.0 µg/L				
24P. PCB-1016 (12674-11-2)			X	ND						26	<1.0 µg/L				
25P. Toxaphene (8001-35-2)			X	ND						1	<1.0 µg/L				

EPA I.D. NUMBER: WA2170023418

OUTFALL NO.: 019

V. INTAKE AND EFFLUENT CHARACTERISTICS

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall.

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	3. UNITS a. CONCENTRATION	b. MASS	4. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES
a. Biochemical Oxygen Demand (BOD)	< 5.0	N/A					1	mg/L				
b. Chemical Oxygen Demand (COD)	ND[A]	N/A					1	mg/L				
c. Total Organic Carbon (TOC)	1.9	81.0[B]			1.29	55.0[B]	14	mg/L	lbs/day			
d. Total Suspended Solids (TSS)	< 4.0	N/A					1	mg/L				
e. Ammonia (as N)	0.38	16.2[B]			0.24	10.2[B]	16	mg/L	lbs/day			
f. Flow	VALUE 11.21		VALUE 9.75		VALUE 5.11		104	mgd		VALUE		
g. Temperature (winter)	VALUE		VALUE 13.9		VALUE 11.4		11	°C		VALUE		
h. Temperature (summer)	VALUE		VALUE 15.2		VALUE 13		11	°C		VALUE		
i. pH	MINIMUM 7.7[C]	MAXIMUM 7.7[C]					1	STANDARD UNITS				

Notes:

[A] Chloride analysis (Method 325.2) results of this sample were 11000 mg/L. Analysis Method 410.3 was used for COD.

[B] All loading (mass) values are based on the long term average flow value.

[C] This discharge was sampled only once for pH.

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Compare one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X" a. BELIEVED PRESENT	b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (1) CONCENTRATION	(2) MASS	d. NO OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE	b. NO. OF ANALYSES
a. Bromide (24959-67-9)		X										See Supplement 5	
b Chlorine, Total Residual	X[A]												
c. Color		X											
d. Fecal Coliform		X											
e. Fluoride (1698-48-8)		X											
f. Nitrate-Nitrite (as N)		X											
g. Nitrogen, Total Organic (as N)	X[B]												
h. Oil and Grease		X	ND		ND		ND		110	<5 mg/L			
i. Phosphorus (as P), Total (7723-14-0)	X[B]												
j. Radioactivity													
(1) Alpha, Total		X											
(2) Beta, Total		X											
(3) Radium, Total		X											
(4) Radium 226, Total		X											
k. Sulfate (as SO_4) (14808-79-8)		X											
l. Sulfide (as S)		X											
m. Sulfite (as SO_3) (14265-45-3)		X											

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V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 019

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall.

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	3. UNITS a. CONCENTRATION	b. MASS	4. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES
a. Biochemical Oxygen Demand (BOD)	< 5.0	N/A					1	mg/L				
b. Chemical Oxygen Demand (COD)	580.0[A]	N/A					1	mg/L				
c. Total Organic Carbon (TOC)	1.9	81.0[B]			1.29	55.0[B]	14	mg/L	lbs/day			
d. Total Suspended Solids (TSS)	< 4.0	N/A					1	mg/L				
e. Ammonia (as N)	0.38	16.2[B]			0.24	10.2[B]	16	mg/L	lbs/day			
f. Flow	VALUE 10.6		VALUE 10.2		VALUE 5.9		104	mgd		VALUE		
g. Temperature (winter)	VALUE		VALUE 13.9		VALUE 11.4		11	°C		VALUE		
h. Temperature (summer)	VALUE		VALUE 15.2		VALUE 13		11	°C		VALUE		
i. pH	MINIMUM 7.7[C]	MAXIMUM 7.7[C]					1	STANDARD UNITS				

Notes:

[A] Chloride analysis (Method 325.3) results of this sample were 9600 mg/L. Analysis Method 410.4 was used for COD .

[B] All loading (mass) values are based on the long term average flow value.

[C] This discharge was sampled only once for pH.

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Compare one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X" a. BELIEVED PRESENT	b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (1) CONCENTRATION	(2) MASS	d. NO OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
a. Bromide (24959-67-9)		X										See Supplement 5		
b Chlorine, Total Residual	X[A]													
c. Color		X												
d. Fecal Coliform		X												
e. Fluoride (1698-48-8)		X												
f. Nitrate-Nitrite (as N)		X												
g. Nitrogen, Total Organic (as N)	X[B]													
h. Oil and Grease		X	ND		ND		ND		110	<5 mg/L				
i. Phosphorus (as P), Total (7723-14-0)	X[B]													
j. Radioactivity														
(1) Alpha, Total		X												
(2) Beta, Total		X												
(3) Radium, Total		X												
(4) Radium 226, Total		X												
k. Sulfate (as SO_4) (14808-79-8)		X												
l. Sulfide (as S)		X												
m. Sulfite (as SO_3) (14265-45-3)		X												

4/12/02 Replacement

n. Surfacants	X[C]														
o. Aluminum, To... (7429-90-5)	X		174 (URS)						1	µg/L					
p. Barium, Total (7440-39-3)	X		61.0 (URS)						1	µg/L					
q. Boron, Total (7440-42-8)		X													
r. Cobalt, Total (7440-48-4)		X	ND						1	<10.0 µg/L					
s. Iron, Total (7439-89-6)	X		102 (URS)						1	µg/L					
t. Magnesium, Total (7439-95-4)	X		785,000 (URS)						1	µg/L					
u. Molybdenum, Total (7439-98-7)	X[D]														
v. Manganese, Total (7439-96-5)	X		410 (URS)						1	µg/L					
w. Tin, Total (7440-31-5)	X[D]														
x. Titanium, Total (7440-32-6)	X[D]														

Notes:

A Chlorine is present in discharges of potable water, non-contact cooling water, and freeze protection water.

B Nitrate-Nitrite and Phosphorus are present in surface waters which enter the dry dock s through hydrostatic relief and caisson leakage. See Supplement 5.

C Surfacants are present in formulations used to clean decks of surface craft in dry dock.

D These potential pollutants are constituents of HY80 steel, of which Navy vessel hulls are constructed. HY80, per military specifications, contains the following maximum metals concentrations: tin - 0.03%, molybdenum - 0.63%, and titanium - 0.02%. These hulls are currently being cut up for disposal/recycling. During rainfall, cutting debris which could contain these metals, could enter the dry dock drainage system. The new storm water collection systems (also known as process water collection systems) redirect the first flush of storm water runoff so it will not reach the NPDES outfall (see Supplement 3).

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a (secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2,4 dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table (all 7 pages) for each outfall. See instructions for additional details and requirements.

POLLUTANT AND CAS NO. (if available)	2. MARK "X" a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)			X	ND						1	<2.5 µg/L		See Supplement 5		
2M. Arsenic, Total (7440-38-2)			X	1.8 (also found in blank)						1	µg/L				
3M. Beryllium, Total (7440-41-7)			X	ND						1	<1.0 µg/L				
4M. Cadmium, Total (7440-43-0)		X		ND						1	<2.5 µg/L				
5M. Chromium, Total (7440-47-3)		X		ND						1	<10 µg/L				
6M. Copper, Total recoverable (7440-50-8)	X	X		190	8.1	51	2.2	6.0	0.3	113	µg/L	lbs/day			
7M. Lead, Total (7439-92-1)		X		4.0	0.2			0.3	0	13	µg/L	lbs/day			
8M. Mercury, Total (7439-97-6)		X		0.4	0			ND	0	14	<0.2 µg/L	lbs/day			

9M. Nickel, To (7440-22-4)		X		ND						1	<7.9 µg/L					
10M. Selenium, Total (7782-49-2)			X	ND						1	<0.5 µg/L					
11M. Silver, Total (7440-22-4)			X	ND						1	<2.5 µg/L					
12M. Thallium, Total (7440-28-0)			X	ND						1	<2.5 µg/L					
13M. Zinc, Total recoverable (7440-66-6)		X		49	2.1			11.7	0.5	12	µg/L	lbs/day				
14M. Cyanide, Total (57-12-5)			X													
15M. Phenols, Total			X													
DIOXIN																
2,3,7,8-Tetra-Chlorodibenzo-P-Dioxin (1764-01-6)			X	DESCRIBE RESULTS												
GC/MS FRACTION - VOLATILE COMPOUNDS																
1V. Acrolein (107-02-8)			X	ND							µg/L[B]					
2V. Acrylonitrile (107-13-1)			X	ND						1	µg/L[B]					
3 V. Benzene (71-43-2)			X	ND						2	<0.5 µg/L					
4V. Bis (Chloro-methyl) Ether (542-88-1)			X							1	µg/L					
5V. Bromoform (75-25-2)			X	ND						2	<0.2 µg/L					
6V. Carbon Tetrachloride (56-23-5)			X	ND						2	<0.2 µg/L					
7V. Chlorobenzene (108-90-7)			X	ND						2	<0.2 µg/L					
8V. Chlorodibromo-methane (124-48-1)			X	ND						2	<0.2 µg/L					
9V. Chloroethane (75-00-3)			X	ND						2	<0.2 µg/L					
10V. 2-Chloroethylvinyl Ether (110-75-8)			X	ND						1	<1.0 µg/L					
11V. Chloroform (67-66-3)		X		A						2	µg/L					
12V. Dichlorobromo-methane (75-27-4)			X	ND						2	<0.2 µg/L					
13V. Dichlorodifluoro-methane(75-71-8)			X	ND						1	<0.2 µg/L					
14V. 1,1 Dichloro-ethane (75-34-3)		X		A						2	µg/L					
15V. 1,2 Dichloro-ethane (107-06-2)		X		A						2	µg/L					
16V. 1,1 Dichloro-ethylene (75-35-4)			X	ND						2	<0.2 µ/g/L					
17V. 1,2 Dichloro-propane (78-87-5)			X	ND						2	<0.2 µg/L					
18V. 1,3 Dichloro-propylene (542-75-6)			X													

19V. Ethylbenz (100-41-4)			X	ND						2	<0.2 µg/L					
20V. Methyl Bromide (74-83-9)			X	ND						2	<0.2 µg/L					
21V. Methyl Chloride (74-87-3)			X	ND						2	<0.2 µg/L					
22V. Methylene Chloride (75-09-2)			X	ND						2	<0.2 µg/L					
23V. 1,1,2,2-Tetra-chloroethane (79-34-5)			X	ND						2	<0.2 µg/L					
24V. Tetrachloro-ethylene (127-18-4)			X	ND						2	<0.2 µg/L					
25V. Toluene (108-88-3)			X	ND						2	<0.2 µg/L					
26V. 1,2-Trans-Dichloroethylene (156-60-5)			X	ND						2	<0.2 µg/L					
27V. 1,1,1-Trichloroethane (71-55-6)		X		A						2	<0.2 µg/L					
28V. 1,1,2-Trichloroethane (79-00-5)			X	ND						2	<0.2 µg/L					
29V. Trichloro-ethylene (79-01-6)		X		A						2	<0.2 µg/L					
30V. Trichloro-fluoromethane (75-69-4)			X	ND						1	<0.2 µg/L					
31V. Vinyl Chloride (75-01-4)			X	ND						2	<0.2 µg/L					
Notes: A Positive results for this pollutant were found in dry dock drainage samples taken by USGS. this pollutant was not detected at the outfall. B Minimum detection limits for these compounds were not given in the USGS report.																
GC/MS FRACTIONS - ACID COMPOUNDS																
1A. 2-Chlorophenol (95-57-8)			X	ND						1	<1.0 µg/L					
2A. 2,4-Dichloro-phenol (120-83-2)			X	ND						1	<2.0 µg/L					
3A. 2,4 -Dimethyl-phenol (105-67-9)			X	ND						1	<2.0 µg/L					
4A. 4,6-Dinitro-O-cresol (534-52-1)			X	ND						1	<5.0 µg/L					
5A. 2,4-Dinitro-phenol (51-28-5)			X	ND						1	<10.0 µg/L					
6A. 2-Nitrophenol (88-75-5)			X	ND						1	<2.0 µg/L					
7A. 4-Nitrophenol (100-02-7)			X	ND						1	<10.0 µg/L					
8A. P-Chloro-M-Cresol (59-50-7)			X	ND						1	<2.0 µg/L					
9A. Pentachloro-phenol (87-86-5)			X	ND						1	<10.0 µg/L					
10A. Phenol (108-95-2)			X	ND						1	<1.0 µg/L					
11A. 2,4,6-Tri-chlorophenol (88-06-2)			X	ND						1	< 2.0 µg/L					
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS																
1B. Acenapthene (83-32-9)			X	ND						2	<1.0 µg/L					

2B. Acenaphty (208-96-8)			X	ND						2	<1.0 µg/L				
3B. Anthracene (120-12-7)			X	ND						2	<1.0 µg/L				
4B. Benzidine (92-87-5)			X												
5B. Benzo *(a)* Anthracene (56-55-3)			X	ND						2	<1.0 µg/L				
6B. Benzo *(a)* Pyrene (50-32-8)			X	ND						2	<1.0 µg/L				
7B. 3,4-Benzoflour-anthene (205-99-2)			X	ND						2	<1.0 µg/L				
8B. Benzo *(ghi)* Perylene (191-24-2)			X	ND						2	<1.0 µg/L				
9B. Benzo *(k)* Fluoranthene (205-99-2)			X	ND						2	<1.0 µg/L				
10B. Bis *(2-Chloro-ethoxy)* Methane (111-91-1)			X	ND						2	<1.0 µg/L				
11B. Bis *(2-Chloro--ethyl)* Ether (111-44-4)			X	ND						2	<1.0 µg/L				
12B. Bis *(2-Chloro-isopropyl)* Ether (102-60-1)			X												
13B. Bis *(2-Ethyl-hexyl)* Phthalate (117-81-7)			X	ND						2	<1.0 µg/L				
14B. 4-Bromo-phenyl Phenyl Ether (101-55-3)			X	ND						2	<2.0 µg/L				
15B. Butyl Benzyl Phthalate (85-86-7)			X	ND						2	<1.0 µg/L				
16B. 2-Chloro-naphthalene (91-58-7)			X	ND						2	<1.0 µg/L				
17B. 4-Chloro-phenyl Phenyl Ether (7005-72-3)			X	ND						2	<1.0 µg/L				
18B. Chrysene (218-01-9)			X	ND						2	<1.0 µg/L				
19B. Dibenzo *(a,h)* Anthracene (53-70-3)			X	ND						2	<1.0 µg/L				
20B. 1,2-Dichloro-benzene (95-50-1)			X	ND						1	<5.0 µg/L				
21B. 1,3 Dichloro-benzene (541-73-1)			X	ND						1	<5.0 µg/L				
22B. 1,4-Dichloro-benzene (106-46-7)			X	ND						1	<5.0 µg/L				
23B. 3,3'-Dichloro-benzidine (91-94-1)			X	ND						1	<5.0 µg/L				
24B. Diethyl Phthalate (84-66-2)			X	ND						2	<1.0 µg/L				
25B. Dimethyl Phthalate (131-11-3)			X	ND						2	<1.0 µg/L				
26B. Di-N- Butyl Phthalate (84-74-2)			X	ND						2	<1.0 µg/L				

27B. 2,4-Dinitrotoluene (121-14-2)			X	ND						2	<2.0 µg/L				
28B. 2,6-Dinitrotoluene (606-20-2)			X	ND						2	<2.0 µg/L				
29B. Di-N-Octyl Phthalate (117-84-0)			X	ND						2	<1.0 µg/L				
30B. 1,2-Diphenylhydrazine *(as Azobenzene)* (122-66-7)			X												
31B. Fluoranthene (206-44-0)			X	ND						2	<1.0 µg/L				
32B. Fluorene (86-73-7)			X	ND						2	< 1.0 µg/L				
33B. Hexachlorobenzene (118-74-1)			X	ND						2	< 5.0 µg/L				
34B. Hexachlorobutadiene (87-68-3)			X	ND						2	<2.0 µg/L				
35B. Hexachlorocyclopentadiene (77-47-4)			X	ND						2	<5.0 µg/L				
36B. Hexachloroethane (67-72-1)			X	ND						2	<2.0 µg/L				
37B. Indeno *(1,2,3-cd)* Pyrene (193-39-5)			X	ND						2	<1.0 µg/L				
38B. Isophorone (78-59-1)			X	ND						2	<1.0 µg/L				
39B. Naphthalene (91-20-3)			X	ND						2	<1.0 µg/L				
40B. Nitrobenzene (98-95-3)			X	ND						2	<1.0 µg/L				
41B. N-Nitrosodimethylamine (62-75-9)			X	ND						1	<5.0 µg/L				
42B. N-Nitrosodi-N-Propylamine (621-64-7)			X	ND						2	<2.0,µg/L				
43B. N-Nitrosodiphenylamine (86-30-6)			X	ND						2	<2.0 µg/L				
44B. Phenanthrene (85-01-8)			X	ND						2	<1.0 µg/L				
45B. Pyrene (129-00-0)			X	ND						2	<1.0 µg/L				
46B. 1,2,4-Trichlorobenzene (120-82-1)			X	ND						2	<1.0 µg/L				
GC/MS FRACTION - PESTICIDES															
1P. Aldrin (309-00-2)			X	ND						1	<0.01 µg/L				
2P. α–BHC (319-85-7)			X	ND						1	<0.01 µg/L				
3P. β-BHC (319-85-7)			X	ND						1	<0.01 µg/L				
4P. γ-BHC (58-89-9)			X	ND						1	<0.01 µg/L				
5P. δ-BHC (319-86-8)			X	ND						1	<0.01 µg/L				

6P. Chlordane (57-74-9)			X	ND						1	<0.01 µg/L				
7P. 4,4'-DDT (50-29-3)			X	ND						1	<0.02 µg/L				
8P. 4,4'-DDE (72-55-9)			X	ND						1	<0.02 µg/L				
9P. 4,4'-DDD (72-54-8)			X	ND						1	<0.02 µg/L				
10P. Dieldrin (60-57-1)			X	ND						1	<0.02 µg/L				
11P. α-Endosulfan (115-29-7)			X												
12P. β-Endosulfan (115-29-7)			X												
13P. Endosulfan Sulfate (1031-07-8)			X	ND						1	<0.02 µg/L				
14P. Endrin (72-20-8)			X	ND						1	<0.02 µg/L				
15P. Endrin Aldenhyde (7421-93-4)			X	ND						1	<0.02 µg/L				
16P. Heptachlor (76-44-8)			X	ND						1	<0.01 µg/L				
17P. Heptachlor Epoxide (1024-57-3)			X	ND						1	<0.01 µg/L				
18P. PCB-1242 (53469-21-9)			X	ND						27	<1.0 µg/L				
19P. PCB-1254 (11097-69-1)			X	ND						27	<1.0 µg/L				
20P. PCB-1221 (11104-28-2)			X	ND						27	<1.0 µg/L				
21P. PCB-1232 (11141-16-5)			X	ND						27	<1.0 µg/L				
22P. PCB-1248 (12672-29-6)			X	ND						27	<1.0 µg/L				
23P. PCB-1260 (11096-82-5)			X	ND						27	<1.0 µg/L				
24P. PCB-1016 (12674-11-2)			X	ND						27	<1.0 µg/L				
25P. Toxaphene (8001-35-2)			X	ND						1	<1.0 µg/L				

EPA I.D. NUMBER: WA2170023418

OUTFALL NO.: 021

V. INTAKE AND EFFLUENT CHARACTERISTICS

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall.

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	2. EFFLUENT a. MAXIMUM DAILY VALUE (2) MASS	2. EFFLUENT b. MAXIMUM 30 DAY VALUE (1) CONCENTRATION	2. EFFLUENT b. MAXIMUM 30 DAY VALUE (2) MASS	2. EFFLUENT c. LONG TERM AVRG. VALUE (1) CONCENTRATION	2. EFFLUENT c. LONG TERM AVRG. VALUE (2) MASS	2. EFFLUENT d. NO. OF ANALYSES	3. UNITS a. CONCENTRATION	3. UNITS b. MASS	4. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	4. INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) MASS	4. INTAKE (optional) d. NO. OF ANALYSES
a. Biochemical Oxygen Demand (BOD)	6.0	N/A					1	mg/L				
b. Chemical Oxygen Demand (COD)	< 10.0	N/A					1	mg/L				
c. Total Organic Carbon (TOC)	4.0	N/A					1	mg/L				
d. Total Suspended Solids (TSS)	228	156.02[A]	20.6	14.10[A]	2.7	1.85[A]	293	mg/L	lbs/day			
e. Ammonia (as N)	< 0.1	N/A					1	mg/L				
f. Flow	VALUE 0.14		VALUE 0.14		VALUE 0.082		24	mgd		VALUE		
g. Temperature (winter)	VALUE 17.2		VALUE 15.6		VALUE 11.7		8	°C		VALUE		
h. Temperature (summer)	VALUE 25		VALUE 20.6		VALUE 15.4		12	°C		VALUE		
i. pH	MINIMUM 6.7	MAXIMUM 7.14					730	STANDARD UNITS				

Notes:

[A] All loading (mass) values are based on the long term average flow value.

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X" a. BELIEVED PRESENT	2. MARK "X" b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	3. EFFLUENT a. MAXIMUM DAILY VALUE (2) MASS	3. EFFLUENT b. MAXIMUM 30 DAY VALUE (1) CONCENTRATION	3. EFFLUENT b. MAXIMUM 30 DAY VALUE (2) MASS	3. EFFLUENT c. LONG TERM AVRG. VALUE (1) CONCENTRATION	3. EFFLUENT c. LONG TERM AVRG. VALUE (2) MASS	3. EFFLUENT d. NO OF ANALYSES	4. UNITS a. CONCENTRATION	4. UNITS b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE	5. INTAKE (optional) b. NO. OF ANALYSES
a. Bromide (24959-67-9)		X											
b. Chlorine, Total Residual		X											
c. Color		X											
d. Fecal Coliform		X											
e. Fluoride (1698-48-8)	X		[A]										
f. Nitrate-Nitrite (as N)	X		[A]										
g. Nitrogen, Total Organic (as N)		X											
h. Oil and Grease	X		12	8.21[B]	ND	N/A	ND	N/A	728	<5 mg/L	lbs/day		
i. Phosphorus (as P), Total (7723-14-0)	X		[A]										
j. Radioactivity													
(1) Alpha, Total		X											
(2) Beta, Total		X											
(3) Radium, Total		X											
(4) Radium 226, Total		X											
k. Sulfate (as SO_4) (14808-79-8)	X		[A]										
l. Sulfide (as S)		X											
m. Sulfite (as SO_3) (14265-45-3)		X											
n. Surfacants		X											

o. Aluminum, Tot (7429-90-5)		X												
p. Barium, Total (7440-39-3)		X												
q. Boron, Total (7440-42-8)		X												
r. Cobalt, Total (7440-48-4)		X												
s. Iron, Total (7439-89-6)		X												
t. Magnesium, Total (7439-95-4)	X		[A]											
u. Molybdenum, Total (7439-98-7)		X												
v. Manganese, Total (7439-96-5)		X												
w. Tin, Total (7440-31-5)		X												
x. Titanium, Total (7440-32-6)		X												

Notes:

[A] Past sampling (prior to the Shipyard's current NPDES permit) has shown the presence of the pollutants in Outfall 021 discharge.

[B] All loading (mass) values are based on the long term average flow value.

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a (secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2,4 dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table (all 7 pages) for each outfall. See instructions for additional details and requirements.

POLLUTANT AND CAS NO. (if available)	2. MARK "X" a. TESTING REQUIRED	2. MARK "X" b. BELIEVED PRESENT	2. MARK "X" c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (2) MASS	d. NO OF ANALYSES	4. UNITS a. CONCENTRATION	4. UNITS b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) MASS	5. INTAKE (optional) b. NO. OF ANALYSES
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)			X[A]												
2M. Arsenic, Total (7440-38-2)			X[A]												
3M. Beryllium, Total (7440-41-7)			X[A]												
4M. Cadmium, Total (7440-43-0)			X[A]												
5M. Chromium, Total (7440-47-3)			X	ND						1	<10 µg/L				
6M. Copper, Total (7440-50-8)		X		ND						1	<0.1 mg/L				
7M. Lead, Total (7439-92-1)			X[A]												
8M. Mercury, Total (7439-97-6)			X	ND						1	<0.05 mg/L				
9M. Nickel, Total (7440-22-4)			X[A]												
10M. Selenium, Total (7782-49-2)			X[A]												
11M. Silver, Total (7440-22-4)			X[A]												

12M. Thallium, Total (7440-28-0)			X[A]												
13M. Zinc, Total (7440-66-6)			X	ND						1	<20 µg/L				
14M. Cyanide, Total (57-12-5)			X[A]												
15M. Phenols, Total			X[A]												
Notes: [A] The Shipyard believes these pollutants are absent. Table 19-4 of the Steam Electric Power Generating category document indicates that these pollutants were detected in some Steam Electric powerplants.															
DIOXIN															
2,3,7,8-Tetra-Chlorodibenzo-P-Dioxin (1764-01-6)			X	DESCRIBE RESULTS											
GC/MS FRACTION - VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)			X												
2V. Acrylonitrile (107-13-1)			X												
3 V. Benzene (71-43-2)			X	ND						1	<5 µg/L				
4V. Bis (Chloro-methyl) Ether (542-88-1)			X							1	<5 µg/L				
5V. Bromoform (75-25-2)			X	ND						1	<5 µg/L				
6V. Carbon Tetrachloride (56-23-5)			X	ND											
7V. Chlorobenzene (108-90-7)			X	ND						1	<5 µg/L				
8V. Chlorodibromo-methane (124-48-1)			X	ND						1	<10 µg/L				
9V. Chloroethane (75-00-3)			X												
10V. 2-Chloroethylvinyl Ether (110-75-8)			X	ND						1	<5 µg/L				
11V. Chloroform (67-66-3)		X		14.18						1	µg/L				
12V. Dichlorobromo-methane (75-27-4)			X												
13V. Dichlorodifluoro-methane(75-71-8)			X												
14V. 1,1 Dichloro-ethane (75-34-3)			X												
15V. 1,2 Dichloro-ethane (107-06-2)			X	ND						1	<5 µg/L				
16V. 1,1 Dichloro-ethylene (75-35-4)			X	ND						1	<5 µg/L				
17V. 1,2 Dichloro-propane (78-87-5)			X	ND						1	<5 µg/L				
18V. 1,3 Dichloro-propylene (542-75-6)			X												
19V. Ethylbenzene (100-41-4)			X	ND						1	<5 µg/L				
20V. Methyl Bromide (74-83-9)			X												

21V. Methyl Chloride (74-87-3)			X												
22V. Methylene Chloride (75-09-2)			X	ND						1	<5 µg/L				
23V. 1,1,2,2-Tetra-chloroethane (79-34-5)			X	ND						1	<5 µg/L				
24V. Tetrachloro-ethylene (127-18-4)			X	ND						1	<5µg/L				
25V. Toluene (108-88-3)			X	ND						1	<5 µg/L				
26V. 1,2-Trans-Dichloroethylene (156-60-5)			X	ND						1	<5 µg/L				
27V. 1,1,1-Trichloroethane (71-55-6)			X	ND						1	<5 µg/L				
28V. 1,1,2-Trichloroethane (79-00-5)			X	ND						1	<5 µg/L				
29V. Trichloro-ethylene (79-01-6)			X	ND						1	<5 µg/L				
30V. Trichloro-fluoromethane (75-69-4)			X	ND						1	<5 µg/L				
31V. Vinyl Chloride (75-01-4)			X	ND						1	<10 µg/L				
GC/MS FRACTIONS - ACID COMPOUNDS															
1A. 2-Chlorophenol (95-57-8)			X[A]												
2A. 2,4-Dichloro-phenol (120-83-2)			X												
3A. 2,4 -Dimethyl-phenol (105-67-9)			X												
4A. 4,6-Dinitro-O-cresol (534-52-1)			X												
5A. 2,4-Dinitro-phenol (51-28-5)			X												
6A. 2-Nitrophenol (88-75-5)			X												
7A. 4-Nitrophenol (100-02-7)			X												
8A. P-Chloro-M-Cresol (59-50-7)			X												
9A. Pentachloro phenol (87-86-5)			X[A]												
10A. Phenol (108-95-2)			X[A]												
11A. 2,4,6-Tri-chlorophenol (88-06-2)			X												
Notes: [A] The Shipyard believes these pollutants are absent. Table 19-4 of the Steam Electric Power Generating category document indicates that these pollutants were detected in some Steam Electric powerplants.															
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS															
1B. Acenapthene (83-32-9)			X												
2B. Acenaphtylene (208-96-8)			X												
3B. Anthracene (120-12-7)			X												

4B. Benzidine (92-87-5)			X												
5B. Benzo *(a)* Anthracene (56-55-3)			X												
6B. Benzo *(a)* Pyrene (50-32-8)			X												
7B. 3,4-Benzoflour-anthene (205-99-2)			X												
8B. Benzo *(ghi)* Perylene (191-24-2)			X												
9B. Benzo *(k)* Fluoranthene (205-99-2)			X												
10B. Bis *(2-Chloro-ethoxy)* Methane (111-91-1)			X												
11B. Bis *(2-Chloro--ethyl)* Ether (111-44-4)			X												
12B. Bis *(2-Chloro-isopropyl)* Ether (102-60-1)			X												
13B. Bis *(2-Ethyl-hexyl)* Phthalate (117-81-7)			X[A]												
14B. 4-Bromo-phenyl Phenyl Ether (101-55-3)			X												
15B. Butyl Benzyl Phthalate (85-86-7)			X[A]												
16B. 2-Chloro-naphthalene (91-58-7)			X												
17B. 4-Chloro-phenyl Phenyl Ether (7005-72-3)			X												
18B. Chrysene (218-01-9)			X												
19B. Dibenzo *(a,h)* Anthracene (53-70-3)			X												
20B. 1,2-Dichloro-benzene (95-50-1)			X[A]												
21B. 1,3 Dichloro-benzene (541-73-1)			X												
22B. 1,4-Dichloro-benzene (106-46-7)			X[A]												
23B. 3,3'-Dichloro-benzidine (91-94-1)			X												
24B. Diethyl Phthalate (84-66-2)			X												
25B. Dimethyl Phthalate (131-11-3)			X[A]												
26B. Di-N- Butyl Phthalate (84-74-2)			X[A]												
27B. 2,4-Dinitro-toluene (121-14-2)			X												
28B. 2,6-Dinitro-toluene (606-20-2)			X												

29B. Di-N-Octyl Phthalate (117-84-0)			X[A]												
30B. 1,2-Diphenyl-hydrazine *(as Azo-benzene)* (122-66-7)			X												
31B. Fluoranthene (206-44-0)			X												
32B. Fluorene (86-73-7)			X												
33B. Hexachloro-benzene (118-74-1)			X												
34B. Hexachloro-butadiene (87-68-3)			X												
35B. Hexachloro-cyclopentadiene (77-47-4)			X												
36B. Hexachloro-ethane (67-72-1)			X												
37B. Indeno *(1,2,3-cd)* Pyrene (193-39-5)			X												
38B. Isophorone (78-59-1)			X												
39B. Naphthalene (91-20-3)			X												
40B. Nitrobenzene (98-95-3)			X[A]												
41B. N-Nitrosodi-methylamine (62-75-9)			X												
42B. N-Nitrosodi-N-Propylamine (621-64-7)			X												
43B. N-Nitrosodi-diphenylamine (86-30-0)			X												
44B. Phenanthrene (85-01-8)			X												
45B. Pyrene (129-00-0)			X												
46B. 1,2,4-Trichlorobenzene (120-82-1)			X												
Notes: [A] The Shipyard believes these pollutants are absent. Table 19-4 of the Steam Electric Power Generating category document indicates that these pollutants were detected in some Steam Electric powerplants.															
GC/MS FRACTION - PESTICIDES															
1P. Aldrin (309-00-2)			X												
2P. α-BHC (319-85-7)			X												
3P. β-BHC (319-85-7)			X												
4P. γ-BHC (58-89-9)			X												
5P. δ-BHC (319-86-8)			X												

6P. Chlordane (57-74-9)			X												
7P. 4,4'-DDT (50-29-3)			X												
8P. 4,4'-DDE (72-55-9)			X												
9P. 4,4'-DDD (72-54-8)			X												
10P. Dieldrin (60-57-1)			X												
11P. α-Endosulfan (115-29-7)			X												
12P. β-Endosulfan (115-29-7)			X												
13P. Endosulfan Sulfate (1031-07-8)			X												
14P. Endrin (72-20-8)			X												
15P. Endrin Aldenhyde (7421-93-4)			X												
16P. Heptachlor (76-44-8)			X												
17P. Heptachlor Epoxide (1024-57-3)			X												
18P. PCB-1242 (53469-21-9)			X												
19P. PCB-1254 (11097-69-1)			X												
20P. PCB-1221 (11104-28-2)			X												
21P. PCB-1232 (11141-16-5)			X												
22P. PCB-1248 (12672-29-6)			X												
23P. PCB-1260 (11096-82-5)			X												
24P. PCB-1016 (12674-11-2)			X												
25P. Toxaphene (8001-35-2)			X												

EPA I.D. NUMBER
WA2170023418

V. INTAKE AND EFFLUENT CHARACTERISTICS

[redacted]

OUTFALL NO. 096

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall.

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (2) MASS	c. LONG TERM AVRG. VALUE (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (2) MASS	d. NO. OF ANALYSES	3. UNITS a. CONCENTRATION	3. UNITS b. MASS	4. INTAKE (optional) a. LONG-TERM AVERAGE VALUE (1) CONCENTRATION	a. LONG-TERM AVERAGE VALUE (2) MASS	d. NO. OF ANALYSES
a. Biochemical Oxygen Demand (BOD)	ND	N/A					1	mg/L				
b. Chemical Oxygen Demand (COD)	ND[A]	N/A					1	mg/L				
c. Total Organic Carbon (TOC)	3.63	2.2[B]					6	mg/L	lbs/day			
d. Total Suspended Solids (TSS)	<4.0	NA					1	mg/L	NA			
e. Ammonia (as N)	0.36	0.21[B]					6	mg/L	lbs/day			
f. Flow	VALUE 0.7		VALUE 0.475		VALUE 0.07[C]		104	mgd		VALUE		
g. Temperature (winter 4/97)	VALUE		VALUE 11.7		VALUE		3	°C		VALUE		
h. Temperature (summer 9/96)	VALUE		VALUE 14.6		VALUE		1	°C		VALUE		
i. pH	7.5				[redacted]		1	STANDARD UNITS		[redacted]		

Notes:

[A] Chloride analysis (Method 325.2) results of this sample were 9900 mg/L. Analysis Method 410.3 was used for COD.

[B] All loading (mass) values are based on the long term average flow value.

[C] Outfall 096 discharges infrequently. When not operating, water is discharged via Outfall 018A or 018B. The long term average flow includes those time frames when the outfall was not operating.

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X" a. BELIEVED PRESENT	2. MARK "X" b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (2) MASS	c. LONG TERM AVRG. VALUE (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (2) MASS	d. NO OF ANALYSES	4. UNITS a. CONCENTRATION	4. UNITS b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE	b. NO. OF ANALYSES
a. Bromide (24959-67-9)		X										See Supplement 5	
b Chlorine, Total Residual	X[A]												
c. Color		X											
d. Fecal Coliform		X											
e. Fluoride (1698-48-8)		X											
f. Nitrate-Nitrite (as N)		X											
g. Nitrogen, Total Organic (as N)	X[B]												
h. Oil and Grease		X	ND		ND		ND		12	<5 mg/L			
i. Phosphorus (as P), Total (7723-14-0)	X[B]												
j. Radioactivity													
(1) Alpha, Total		X											
(2) Beta, Total		X											
(3) Radium, Total		X											
(4) Radium 226, Total		X											
k. Sulfate (as SO_4) (14808-79-8)		X											

Page Revised

EPA I.D. NUMBER: WA2170023418

V. INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 096

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall.

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	2. EFFLUENT a. MAXIMUM DAILY VALUE (2) MASS	2. EFFLUENT b. MAXIMUM 30 DAY VALUE (1) CONCENTRATION	2. EFFLUENT b. MAXIMUM 30 DAY VALUE (2) MASS	2. EFFLUENT c. LONG TERM AVRG. VALUE (1) CONCENTRATION	2. EFFLUENT c. LONG TERM AVRG. VALUE (2) MASS	2. EFFLUENT d. NO. OF ANALYSES	3. UNITS a. CONCENTRATION	3. UNITS b. MASS	4. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	4. INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) MASS	4. INTAKE (optional) d. NO. OF ANALYSES
a. Biochemical Oxygen Demand (BOD)	A						1	mg/L				
b. Chemical Oxygen Demand (COD)	A						1	mg/L				
c. Total Organic Carbon (TOC)	3.63	2.2[B]					6	mg/L	lbs/day			
d. Total Suspended Solids (TSS)	<4.0	NA					1	mg/L	NA			
e. Ammonia (as N)	0.36	0.21[B]					6	mg/L	lbs/day			
f. Flow	VALUE 1.6		VALUE 1.1		VALUE 0.1[A]		104	mgd		VALUE		
g. Temperature (winter 4/97)	VALUE		VALUE 11.7		VALUE		3	°C		VALUE		
h. Temperature (summer 9/96)	VALUE		VALUE 14.6		VALUE		1	°C		VALUE		
i. pH	7.5						1	STANDARD UNITS				

Notes:

[A] Outfall 096 discharges infrequently. When not operating, water is discharged via Outfall 018A or 018B.

[B] All loading (mass) values are based on the long term average flow value.

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X" a. BELIEVED PRESENT	2. MARK "X" b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	3. EFFLUENT a. MAXIMUM DAILY VALUE (2) MASS	3. EFFLUENT b. MAXIMUM 30 DAY VALUE (1) CONCENTRATION	3. EFFLUENT b. MAXIMUM 30 DAY VALUE (2) MASS	3. EFFLUENT c. LONG TERM AVRG. VALUE (1) CONCENTRATION	3. EFFLUENT c. LONG TERM AVRG. VALUE (2) MASS	3. EFFLUENT d. NO OF ANALYSES	4. UNITS a. CONCENTRATION	4. UNITS b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE	5. INTAKE (optional) b. NO. OF ANALYSES
a. Bromide (24959-67-9)		X										See Supplement 5	
b. Chlorine, Total Residual	X[A]												
c. Color		X											
d. Fecal Coliform		X											
e. Fluoride (1698-48-8)		X											
f. Nitrate-Nitrite (as N)		X											
g. Nitrogen, Total Organic (as N)	X[B]												
h. Oil and Grease		X	ND		ND		ND		12	<5 mg/L			
i. Phosphorus (as P), Total (7723-14-0)	X[B]												
j. Radioactivity													
(1) Alpha, Total		X											
(2) Beta, Total		X											
(3) Radium, Total		X											
(4) Radium 226, Total		X											
k. Sulfate (as SO_4) (14808-79-8)		X											
l. Sulfide (as S)	X[C]												
m. Sulfite (as SO_3) (14265-45-3)		X											

4/12/02 Replacement

n. Surficants		X												
o. Aluminum, Tot.. (7429-90-5)	X[D]													
p. Barium, Total (7440-39-3)	X[D]													
q. Boron, Total (7440-42-8)		X												
r. Cobalt, Total (7440-48-4)		X												
s. Iron, Total (7439-89-6)	X[D]													
t. Magnesium, Total (7439-95-4)	X[D]													
u. Molybdenum, Total (7439-98-7)	X[E]													
v. Manganese, Total (7439-96-5)	X													
w. Tin, Total (7440-31-5)	X[E]													
x. Titanium, Total (7440-32-6)	X[E]													

Notes:

A Chlorine is present in discharges of potable water, non-contact cooling water, and freeze protection water.

B Nitrate-Nitrite and Phosphorus are present in surface waters which enter the dry dock s through hydrostatic relief and caisson leakage. See Supplement 5.

C Hydrogen sulfide odors present in Dry Dock 3 are presumed to be IR related.

D These pollutants were detected in discharge samples taken at Outfall 018 during October 1995. Discharges from Dry Docks 1, 2, and 3, which would be routed to Outfall 096 if Pumpwell 2 were operational, were being discharged from Outfall 018 in October 1995. As similar work operations, i.e., decomissing and disposal of naval vessels, are occuring in Dry Docks 1 through 5, these pollutants are believed present.

E These potential pollutants are constituents of HY80 steel, of which Navy vessel hulls are constructed. HY80, per military specifications, contains the following maximum metals concentrations: tin - 0.03%, molybdenum - 0.63%, and titanium - 0.02%. These hulls are currently being cut up for disposal/recycling. During rainfall, cutting debris which could contain these metals, could enter the dry dock drainage system. The new Storm Water Collection Systems redirect the first flush of storm water runoff so it will not reach the NPDES outfall (see Supplement 3).

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a (secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2,4 dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table (all 7 pages) for each outfall. See instructions for additional details and requirements.

POLLUTANT AND CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)			X										See Supplement 5		
2M. Arsenic, Total (7440-38-2)		X[A]													
3M. Beryllium, Total (7440-41-7)			X												
4M. Cadmium, Total (7440-43-0)		X[A]													
5M. Chromium, Total (7440-47-3)		X[A]													
6M. Copper, Total recoverable (7440-50-8)	X	X		443				79		12	µg/L				
7M. Lead, Total (7439-92-1)		X[B]		ND				ND		8	µg/L				

8M. Mercury, Tot (7439-97-6)			X	ND				ND		8	µg/L				
9M. Nickel, Total (7440-22-4)		X													
10M. Selenium, Total (7782-49-2)			X												
11M. Silver, Total (7440-22-4)			X												
12M. Thallium, Total (7440-28-0)			X												
13M. Zinc, Total recoverable (7440-66-6)		X		48				19		8	µg/L				
14M. Cyanide, Total (57-12-5)			X												
15M. Phenols, Total			X												

Notes:

[A] These pollutants were detected in discharge samples taken at Outfall 018 during October 1995. Discharges from Dry Docks 1, 2, and 3, which would be routed to Outfall 096 if Pumpwell 2 were operational, were being discharged from Outfall 018 in October 1995. As similar work operations, i.e., decomissing and disposal of naval vessels, are occuring in Dry Docks 1 through 5, these pollutants are believed present.

[B] During June, July, and August 1994 USGS sampled discharges from Dry docks 1 and 3 in four locations which drain to Outfall 096 when Pumpwell 2 is operational. Positive results of copper and lead in those samples were obtained, indicating the presence of lead in this discharge. Lead was not detected at the outfall.

DIOXIN

2,3,7,8-Tetra-Chlorodibenzo-P-Dioxin (1764-01-6)			X	DESCRIBE RESULTS											

GC/MS FRACTION - VOLATILE COMPOUNDS

Samples were taken by USGS during June, July, and August 1994 in specified locations of Dry Docks 1 through 5 and Pumpwell 4 (Outfall 018). During the sampling period, drainage was routed to Pumpwell 4 except for 8 days during the second and third weeks of June, and the last week of August when Pumpwell 2 was operating and discharges from Dry Docks 1, 3, and one half the discharge from Dry Dock 2 was routed to Outfall 096. Samples taken at Pumpwell 4 by USGS may or may not have included discharges from Dry Docks 1 and 3.

1V. Acrolein (107-02-8)			X												
2V. Acrylonitrile (107-13-1)			X												
3 V. Benzene (71-43-2)			X												
4V. Bis (Chloro-methyl) Ether (542-88-1)			X												
5V. Bromoform (75-25-2)		X[A]													
6V. Carbon Tetrachloride (56-23-5)			X												
7V. Chlorobenzene (108-90-7)			X												
8V. Chlorodibromo-methane (124-48-1)			X												
9V. Chloroethane (75-00-3)			X												
10V. 2-Chloroethylvinyl Ether (110-75-8)			X												
11V. Chloroform (67-66-3)		X[A & B]													
12V. Dichlorobromo-methane (75-27-4)		X[A]													
13V. Dichlorodifluoro-methane(75-71-8)			X												

14V. 1,1 Dichloroethane (75-34-3)			X													
15V. 1,2 Dichloroethane (107-06-2)			X													
16V. 1,1 Dichloroethylene (75-35-4)			X													
17V. 1,2 Dichloropropane (78-87-5)		X[B]														
18V. 1,3 Dichloropropylene (542-75-6)			X													
19V. Ethylbenzene (100-41-4)			X													
20V. Methyl Bromide (74-83-9)			X													
21V. Methyl Chloride (74-87-3)			X													
22V. Methylene Chloride (75-09-2)			X													
23V. 1,1,2,2-Tetrachloroethane (79-34-5)			X													
24V. Tetrachloroethylene (127-18-4)		X[A & B]														
25V. Toluene (108-88-3)			X													
26V. 1,2-Trans-Dichloroethylene (156-60-5)			X													
27V. 1,1,1-Trichloroethane (71-55-6)		X[A & B]														
28V. 1,1,2-Trichloroethane (79-00-5)			X													
29V. Trichloroethylene (79-01-6)		X[A & B]														
30V. Trichlorofluoromethane (75-69-4)			X													
31V. Vinyl Chloride (75-01-4)			X													

Notes:

[A] Positive results for this pollutant were were detected in samples taken at Pumpwell 4 during the sampling period. See above note.

[B] Positive results for this pollutant were found in Dry Dock 3 drainage samples taken by USGS. See above note.

GC/MS FRACTIONS - ACID COMPOUNDS																
1A. 2-Chlorophenol (95-57-8)			X													
2A. 2,4-Dichlorophenol (120-83-2)			X													
3A. 2,4 -Dimethylphenol (105-67-9)			X													
4A. 4,6-Dinitro-O-cresol (534-52-1)			X													
5A. 2,4-Dinitrophenol (51-28-5)			X													
6A. 2-Nitrophenol (88-75-5)			X													
7A. 4-Nitrophenol (100-02-7)			X													

8A. P-Chloro-M-Cresol (59-50-7)			X												
9A. Pentachloro phenol (87-86-5)			X												
10A. Phenol (108-95-2)			X												
11A. 2,4,6-Tri-chlorophenol (88-06-2)			X												
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS															
These compounds were analyzed for in samples taken in Dry Docks 1 through 5 by USGS during June, July, and August 1994, No concentrations above minimum reporting levels were detected.															
1B. Acenapthene (83-32-9)			X												
2B. Acenaphtylene (208-96-8)			X												
3B. Anthracene (120-12-7)			X												
4B. Benzidine (92-87-5)			X												
5B. Benzo *(a)* Anthracene (56-55-3)			X												
6B. Benzo *(a)* Pyrene (50-32-8)			X												
7B. 3,4-Benzoflour-anthene (205-99-2)			X												
8B. Benzo *(ghi)* Perylene (191-24-2)			X												
9B. Benzo *(k)* Fluoranthene (205-99-2)			X												
10B. Bis *(2-Chloro-ethoxy)* Methane (111-91-1)			X												
11B. Bis *(2-Chloro--ethyl)* Ether (111-44-4)			X												
12B. Bis *(2-Chloro-isopropyl)* Ether (102-60-1)			X												
13B. Bis *(2-Ethyl-hexyl)* Phthalate (117-81-7)			X												
14B. 4-Bromo-phenyl Phenyl Ether (101-55-3)			X												
15B. Butyl Benzyl Phthalate (85-86-7)			X												
16B. 2-Chloro-naphthalene (91-58-7)			X												
17B. 4-Chloro-phenyl Phenyl Ether (7005-72-3)			X												
18B. Chrysene (218-01-9)			X												
19B. Dibenzo *(a,h)* Anthracene (53-70-3)			X												
20B. 1,2-Dichloro-benzene (95-50-1)			X												

21B. 1,3 Dichloro benzene (541-73-1)			X												
22B. 1,4-Dichloro-benzene (106-46-7)			X												
23B. 3,3'-Dichloro-benzidine (91-94-1)			X												
24B. Diethyl Phthalate (84-66-2)			X												
25B. Dimethyl Phthalate (131-11-3)			X												
26B. Di-N- Butyl Phthalate (84-74-2)			X												
27B. 2,4-Dinitro-toluene (121-14-2)			X												
28B. 2,6-Dinitro-toluene (606-20-2)			X												
29B. Di-N-Octyl Phthalate (117-84-0)			X												
30B. 1,2-Diphenyl-hydrazine *(as Azo-benzene)* (122-66-7)			X												
31B. Fluoranthene (206-44-0)			X												
32B. Fluorene (86-73-7)			X												
33B. Hexachloro-benzene (118-74-1)			X												
34B. Hexachloro-butadiene (87-68-3)			X												
35B. Hexachloro-cyclopentadiene (77-47-4)			X												
36B. Hexachloro-ethane (67-72-1)			X												
37B. Indeno *(1,2,3-cd)* Pyrene (193-39-5)			X												
38B. Isophorone (78-59-1)			X												
39B. Naphthalene (91-20-3)			X												
40B. Nitrobenzene (98-95-3)			X												
41B. N-Nitrosodi-methylamine (62-75-9)			X												
42B. N-Nitrosodi-N-Propylamine (621-64-7)			X												
43B. N-Nitrosodi-diphenylamine (86-30-0)			X												
44B. Phenanthrene (85-01-8)			X												
45B. Pyrene (129-00-0)			X												
46B. 1,2,4-Trichlorobenzene (120-82-1)			X												

GC/MS FRAC[illegible]I - PESTICIDES																
1P. Aldrin (309-00-2)			X													
2P. α-BHC (319-85-7)			X													
3P. β-BHC (319-85-7)			X													
4P. γ-BHC (58-89-9)			X													
5P. δ-BHC (319-86-8)			X													
6P. Chlordane (57-74-9)			X													
7P. 4,4'-DDT (50-29-3)			X													
8P. 4,4'-DDE (72-55-9)			X													
9P. 4,4'-DDD (72-54-8)			X													
10P. Dieldrin (60-57-1)			X													
11P. α-Endosulfan (115-29-7)			X													
12P. β-Endosulfan (115-29-7)			X													
13P. Endosulfan Sulfate (1031-07-8)			X													
14P. Endrin (72-20-8)			X													
15P. Endrin Aldenhyde (7421-93-4)			X													
16P. Heptachlor (76-44-8)			X													
17P. Heptachlor Epoxide (1024-57-3)			X													
18P. PCB-1242 (53469-21-9)			X	ND							7	<1 µg/L				
19P. PCB-1254 (11097-69-1)			X	ND							7	<1 µg/L				
20P. PCB-1221 (11104-28-2)			X	ND							7	<1 µg/L				
21P. PCB-1232 (11141-16-5)			X	ND							7	<1 µg/L				
22P. PCB-1248 (12672-29-6)			X	ND							7	<1 µg/L				
23P. PCB-1260 (11096-82-5)			X	ND							7	<1 µg/L				
24P. PCB-1016 (12674-11-2)			X	ND							7	<1 µg/L				
25P. Toxaphene (8001-35-2)			X													

EPA ID Number (copy from Item 1 of Form 1)
WA2170023418

Form 2F NPDES

EPA

Paperwork Reduction Notice

I. Outfall Location

For each outfall, list the latitude and longitude of its location to the nearest 15 seconds and the name of the receiving water.

A. Outfall Number	B. Latitude			C. Longitude			D. Receiving Water
094	47	33	08	122	39	38	Sinclair Inlet
093	47	33	13	122	39	27	"
092	47	33	15	122	39	22	"
091	47	33	15	122	39	20	"
090	47	33	15	122	39	19	"
089	47	33	15	122	39	18	"
022	47	33	15	122	39	17	"
088	47	33	15	122	39	16	"
087	47	33	15	122	39	15	"
015	47	33	15	122	39	11	"
085	47	33	17	122	39	10	"
084	47	33	19	122	39	10	"
083	47	33	20	122	39	10	"
082	47	33	21	122	39	09	"
041	47	33	21	122	39	08	"
040	47	33	21	122	39	05	"
014	47	33	21	122	39	02	"
039	47	33	21	122	39	01	"
038	47	33	21	122	38	59	"
013	47	33	21	122	38	58	"
037	47	33	21	122	38	56	"
036	47	33	21	122	38	54	"
035	47	33	21	122	38	52	"
034	47	33	21	122	38	50	"
080	47	33	21	122	38	48	"
079	47	33	21	122	38	47	"
078	47	33	21	122	38	47	"
077	47	33	21	122	38	46	"
076	47	33	21`	122	38	45	"
075	47	33	21	122	38	43	"
074	47	33	21	122	38	42	"
073	47	33	21	122	38	42	"
012	47	33	21	122	38	41	"
072	47	33	21	122	38	40	"
011	47	33	21	122	38	39	"

071	47	33	20	122	38	39	Sinclair Inlet
070	47	33	19	122	38	39	"
069	47	33	18	122	38	39	"
068	47	33	17	122	38	39	"
067	47	33	17	122	38	39	"
066	47	33	16	122	38	39	"
065	47	33	15	122	38	39	"
064	47	33	14	122	38	39	"
063	47	33	13	122	38	39	"
062	47	33	12	122	38	39	"
061	47	33	11	122	38	39	"
019	47	33	11	122	38	33	"
060	47	33	12	122	38	32	"
059	47	33	13	122	38	32	"
058	47	33	14	122	38	32	"
010	47	33	21	122	38	31	"
033	47	33	21	122	38	30	"
057	47	33	22	122	38	27	"
032	47	33	22	122	38	26	"
031	47	33	22	122	38	24	"
009	47	33	22	122	38	22	"
030	47	33	28	122	38	20	"
056	47	33	29	122	38	20	"
055	47	33	30	122	38	20	"
029	47	33	30	122	38	19	"
054	47	33	30	122	38	12	"
018	47	33	36	122	38	10	"
008	47	33	35	122	38	11	"
053	47	33	36	122	38	06	"
052	47	33	36	122	38	05	"
050	47	33	36	122	38	04	"
051	47	33	36	122	38	03	"
049	47	33	36	122	38	03	"
048	47	33	36	122	38	02	"
007	47	33	36	122	38	02	"
028	47	33	37	122	38	00	"
027	47	33	37	122	37	57	"
096	47	33	37	122	37	56	"
047	47	33	37	122	37	56	"
046	47	33	36	122	37	54	"
045	47	33	38	122	37	54	"
026	47	33	40	122	37	54	"

006	47	33	39	122	37	54	Sinclair Inlet
044	47	33	39	122	37	54	"
005	47	33	41	122	37	52	"
043	47	33	39	122	37	52	"
042	47	33	39	122	37	50	"
097	47	33	39	122	37	50	"
004	47	33	39	122	37	49	"
017	47	33	26	122	37	48	"
003	47	33	36	122	37	47	"
025	47	33	36	122	37	44	"
002	47	33	36	122	37	37	"
024	47	33	37	122	37	37	"
023	47	33	37	122	37	36	"
001	47	33	40	122	37	31	"
095	47	33	36	122	37	40	"

II. Improvements

A. Are you now required by any Federal, state, or local authority to meet any implementation schedule for the construction, upgrading of operation of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions.

NPDES permit conditions required the implementation of BMPs and completion of a SWPPP by April 1, 1995. Those conditions were met by this facility.

1. Identification of water pollution abatement plans.	2. Affected Outfalls		3. Brief Description of project	4. Projected dates
	numbe r	source of discharge		

B. You may attach additional sheets describing any additional water pollution (or other environmental projects which may affect your discharges) you now have under way or which you plan. Indicate whether each program is now under way or planned, and indicate your actual or planned schedules for construction..

All new construction contracts are reviewed for applicable storm water treatment systems. These may include retention swales, oil/water separators, or other storm water treatment systems. See Supplement 6 for information on current research projects.

III. Site Drainage Map

Attach a site map showing topography (or indicating the outline of drainage areas served by the outfalls covered in the application if a topographic map is unavailable) depicting the facility including: each of its intake and discharge structures; the drainage area of each storm water outfall; paved areas and buildings within the drainage area of each storm water outfall, each known past or present areas used for outdoor storage or disposal of significant materials, each existing structural control measure to reduce pollutants in storm water runoff, materials loading and access areas, areas where pesticides, herbicides, soil conditioners and fertilizers are applied; each of its hazardous waste treatment, storage or disposal units (including each area not required to have a RCRA permit which is used for accumulating hazardous waste under 40 CFR 262.34); each well where fluids from the facility are injected underground; springs, and other surface water bodies which receive storm water discharges from the facility.

Attached are a topographic map and the current Shipyard Storm Water Base Map (shown in quadrants with an extension to the southwest quadrant), PWO Drawings 57837, 57838, 57839, 57840, and 57841. The Storm Water Base map shows discharge structures, drainage areas, buildings, and structural control measures (oil/water separators). Detailed drawings accompany sections IV. B and C to supplement information on the storm water base map. The Shipyard has no fluid injection wells. Sinclair Inlet is the only surface water body to receive storm water discharges from the Shipyard.

IV. Narrative Description of Pollutant Sources

A. For each outfall, provide an estimate of the area (include units) of impervious surfaces (including paved areas and building roofs) drained to the outfall, and an estimate of the total surface area drained by the outfall.

Outfall Number	Area of Impervious Surface (provide units)	Total Area Drained (provide units)
002	84,000 sq. ft.	84,000 sq. ft.
003	454,000 sq. ft.	454,000 sq. ft.
004	5,000 sq. ft.	5,000 sq. ft.

005	105,000 sq. ft.	105,000 sq. ft.
006	414,000 sq. ft.	414,000 sq. ft.
007	244,000 sq. ft.	244,000 sq. ft.
008	478,000 sq. ft.	478,000 sq. ft.
010	1,272,000 sq. ft.	2,544,000 sq. ft.
011	154,000 sq. ft.	154,000 sq. ft.
012	214,000 sq. ft.	214,000 sq. ft.
013	161,500 sq. ft.	161,500 sq. ft.
014	2,009,500 sq. ft.	4,019,000 sq. ft.
015	259,000 sq. ft.	259,000 sq. ft.
017	40,000 sq. ft.	40,000 sq. ft.
018	616,683 sq. ft.	616,683 sq. ft.
019	207,345 sq. ft.	207,345 sq. ft.
022	554,000 sq. ft.	554,000 sq. ft.
023 & 001	879,000 sq. ft.	879,000 sq. ft.
024	24,000 sq. ft.	24,000 sq. ft.
025	116,000 sq. ft.	116,000 sq. ft.
026	20,000 sq. ft.	20,000 sq. ft.
027	54,000 sq. ft.	54,000 sq. ft.
028	54,000 sq. ft.	54,000 sq. ft.
029	154,000 sq. ft.	154,000 sq. ft.
030	154,000 sq. ft.	154,000 sq. ft.
031	184,000 sq. ft.	184,000 sq. ft.
032	224,000 sq. ft.	224,000 sq. ft.
033	204,000 sq. ft.	204,000 sq. ft.
034	209,000 su. ft.	209,000 sq. ft.
035	94,000 sq. ft.	94,000 sq. ft.
036	54,000 sq. ft.	54,000 sq. ft.
037	86,500 sq. ft.	86,500 sq. ft.
038	94,000 sq. ft.	94,000 sq. ft.
039	74,000 sq. ft.	74,000 sq. ft.
040	74,000 sq. ft.	74,000 sq. ft.
041	44,000 sq. ft.	44,000 sq. ft.
042	14,000 sq. ft.	14,000 sq. ft.
043	6,500 sq. ft.	6,500 sq. ft.
044	6,500 sq. ft.	6,500 sq. ft.
045	6,500 sq. ft.	6,500 sq. ft.
046	6,500 sq. ft.	6,500 sq. ft.
047	9,000 sq. ft.	9,000 sq. ft.
048	5,000 sq. ft.	5,000 sq. ft.
049	5,000 sq. ft.	5,000 sq. ft.
050	6,500 sq. ft.	6,500 sq. ft.
051	5,000 sq. ft.	5,000 sq. ft.
052	627,200 sq. ft.	784,000 sq. ft.
053	104,000 sq. ft.	104,000 sq. ft.
054	94,000 sq. ft.	94,000 sq. ft.
055	24,000 sq. ft.	24,000 sq. ft.
056	15,250 sq. ft.	15,250 sq. ft.
057	14,000 sq. ft.	14,000 sq. ft.
058	14,000 sq. ft.	14,000 sq. ft.
059	11,500 sq. ft.	11,500 sq. ft.
060	19,000 sq. ft.	19,000 sq. ft.
061	19,000 sq. ft.	19,000 sq. ft.
062	19,000 sq. ft.	19,000 sq. ft.
063	19,000 sq. ft.	19,000 sq. ft.
064	19,000 sq. ft.	19,000 sq. ft.
065	19,000 sq. ft.	19,000 sq. ft.
066	29,000 sq. ft.	29,000 sq. ft.
067	19,000 sq. ft.	19,000 sq. ft.
068	19,000 sq. ft.	19,000 sq. ft.
069	19,000 sq. ft.	19,000 sq. ft.

070	19,000 sq. ft.	19,000 sq. ft.
071	11,500 sq. ft.	11,500 sq. ft.
072	59,000 sq. ft.	59,000 sq. ft.
073	6,500 sq. ft.	6,500 sq. ft.
074	6,500 sq. ft.	6,500 sq. ft.
075	6,500 sq. ft.	6,500 sq. ft.
076	9,000 sq. ft.	9,000 sq. ft.
077	9,000 sq. ft.	9,000 sq. ft.
078	14,000 sq. ft.	14,000 sq. ft.
079	6,500 sq. ft.	6,500 sq. ft.
080	24,000 sq. ft.	24,000 sq. ft.
082	24,000 sq. ft.	24,000 sq. ft.
083	14,000 sq. ft.	14,000 sq. ft.
084	29,000 sq. ft.	29,000 sq. ft.
085	29,000 sq. ft.	29,000 sq. ft.
087	34,000 sq. ft.	34,000 sq. ft.
088	64,000 sq. ft.	64,000 sq. ft.
089	34,000 sq. ft.	34,000 sq. ft.
090	14,000 sq. ft.	14,000 sq. ft.
091	44,000 sq. ft.	44,000 sq. ft.
092	9,000 sq. ft.	9,000 sq. ft.
093	18,500 sq. ft.	74,000 sq. ft.
094	13,500 sq. ft.	54,000 sq. ft.
095	50,000 sq. ft.	50,000 sq. ft.
096	125,715 sq. ft.	125,715 sq. ft.
097	120,542.5 sq. ft.	120,542.5 sq. ft.

B. Provide a narrative description of significant materials that are currently or in the past three years have been treated, stored or disposed in a manner to allow exposure to storm water; method of treatment, storage, or disposal; past and present materials management practices employed to minimize contact by these materials with storm water runoff; materials loading and access areas; and the location, manner, and frequency in which pesticides, herbicides, soil conditioners, and fertilizers are applied.

The following Shipyard BMPs are currently in use to minimize contact of storm water with the list of significant materials that follows:

BMP 1 YARD CLEANUP The Shipyard will be cleaned on a regular basis to minimize loss of accumulated debris into Sinclair Inlet or the storm drainage system. Do not clean paved areas, equipment, buildings, etc., using wet methods (hosing down) unless conditions of Appendix C of NAVSHIPYDPUGETINST P5090.30A have been met.

Responsible shops or zone managers shall conduct weekly cleanliness inspections of outdoor work and storage areas, including all storm drain catch basins. Provide cleaning of work areas as necessary to maintain control of potential pollutants. When catch basins are filled with deposits, contact Shop 07, at extension 6-4125, for cleaning.

Trash receptacles will be appropriately placed throughout the Shipyard to promote the proper disposal of waste materials. Trash containers will be of the covered type with the exception of forty yard roll-offs. If trash containers are equipped with drainage fixtures, plugs will be installed.

BMP 3 MATERIALS STORAGE AND HANDLING Protect containers storing liquid wastes or other liquids, which have the potential of adding pollutants to water (e.g., fuels, paints, and solvents), from the weather in a protected, secure location away from drains. Proper protection methods include placing materials inside a cofferdam, inside a covered area, underneath tarps, or using rubber mats over storm drains.

Do not store parts, materials, and containers directly on the pavement, dry dock floor, or ground. When possible, store parts, materials, and containers indoors. If outdoor storage is necessary, protect smaller parts, materials, and containers from the weather and place them on pallets. For outdoor storage of large parts (e.g., hull sections), inspect and clean storage areas as necessary to control potential pollutants.

Store both spent and virgin sandblast grit under cover. Eliminate contact between process or storm water and sandblast grit.

BMP 4 CONTAINMENT AND CONTROL OF DUST AND OVERSPRAY Carry out any activity that generates pollutants, (e.g., blasting, painting, metal finishing, welding, grinding) in enclosed, covered areas.

Take applicable measures to adequately contain spent blast grit, paint chips and paint overspray to prevent the discharge of these materials into Sinclair Inlet.

Perform spray paint operations in a manner to contain overspray and spillage, and minimize emission of particulates.

Perform all dry-blasting operations within an enclosure with adequate dust collection, and in accordance with the appropriate Shipyard Industrial Process Instruction. Completely remove spent blast grit from the dry dock floor within 72 hours

BMP 5 DRIP PANS Use drip pans or other protective devices at hose connections when transferring oil, fuel, solvent, industrial wastewater, and paint. Where design constraints, vertical connections, or interferences do not allow placement of drip pans, use other measures, such as chemical resistant drapes. Where a spill would likely occur, use drip pans or other protective devices when making and breaking connections, or during component removal operations.

Immediately repair, replace, or isolate leaking connections, valves, pipes, and hoses, carrying wastewater, fuel, oil, or other hazardous fluids. As a temporary measure, place drip pans under leaking connections, equipment, or vehicles to collect any leaking fluid.

BMP 6 VEHICLE/EQUIPMENT CLEANING Only wash vehicles and equipment in designated approved cleaning areas with liquid wastewaters routed to the sanitary sewer. Vehicle cleaning is allowed only at the west end of Building 455. Contact Code 106.31, at extension 6-0118, for approved equipment cleaning areas.

BMP 7 VEHICLE AND EQUIPMENT PREVENTIVE MAINTENANCE Inspect all government vehicles and equipment for leaks before use. Maintain them in good condition at all times. Inspect infrequently used vehicles and equipment monthly for leaks. Inspect all equipment and vehicles for fluid leaks before placing them in a dry dock. If equipment in a dry dock is found to be leaking, repair it or remove it from the dry dock immediately. Initiate spill response, as appropriate.

Immediately stop all leaks. As a temporary measure, use drip pans to contain leaking fluids.

BMP 8 MATERIAL LOADING/UNLOADING When loading and unloading liquids and fine granulated materials from trucks and trailers at outdoor loading areas, prevent potential spills to storm drains by placing or installing a door skirt, door seal, valved storm drain line, or mats over the storm drains.

BMP 9 OVER-WATER PROTECTION For over-water work provide and position floats, tarps, or other suitable protection adjacent to and under work area to contain debris. Work that has a potential for pollution may include, but is not limited to, painting, paint chipping, blasting, welding, grinding, cutting, chipping, and sanding. No paint or paint residue shall enter Sinclair Inlet. If windy conditions prevent adequate containment of pollutants, stop work until conditions allow.

BMP 10 TREATED WOOD PRODUCTS Consider substituting alternate materials for treated wood products. Where feasible, store treated wood, under cover on pallets or indoors, when not in use.

BMP 11 DISCHARGES INTO STORM DRAINS Unless authorized by Code 106.3 or NAVSHIPYDPUGETINST 5090.30A, do not discharge anything into the Shipyard's storm drains.

Do not dump pollutants on the ground. (See Appendix A of NAVSHIPYDPUGETINST 5090.30A for definition of pollutants).

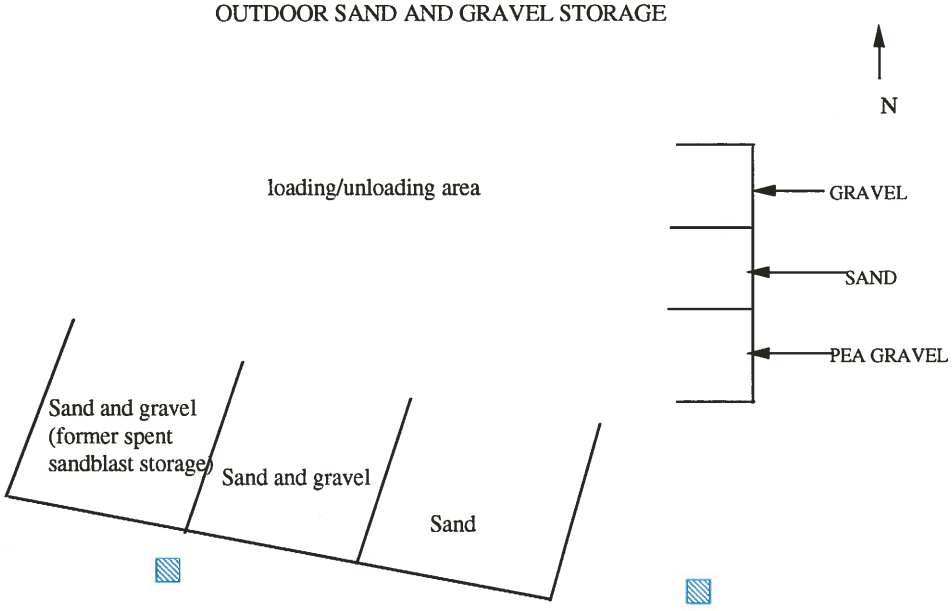
If pollution prevention techniques prove inadequate, contact Code 106.3 regarding using catch basin filters and/or absorbent blankets. Catch basin filters use sand and organic material to trap sediments, oil, and other storm water contaminants. Inspect catch basin filter material regularly and change it as needed. Inform Code 106.3, Environmental Division Head, of the location of all catch basin filters and get Code 106.3 approval before installing catch basin filters in new locations.

If you must carry out operations which could spill significant materials (e.g., liquid hazardous materials or wastes, wastewater, fuels) near a storm drain, place a chemical resistant mat or other protective device over the storm drain during the operation.

BMP 12 STORM SEWER SYSTEM CLEANING AND MAINTENANCE Clean catch basins when the depth of deposits are equal to or greater than 1/3 the depth from the basin to the invert of the lowest pipe into or out of the basin. Inspect catch basins to determine frequency of cleaning. The Shop or Code responsible for the cleanliness of assigned areas will accomplish those inspections. The receiving Shop will be responsible for catch basin inspections in loading /unloading areas at building doors or loading docks. Cleaning services for all catch basins will be provided by Code 952.1. Contact Shop 07 at extension 6-4125 for catch basin cleaning services.

BMP 13 OUTDOOR WORK OPERATIONS When performing outdoor work operations, have equipment and supplies on-hand to control and clean up debris. Many outdoor work operations can produce debris which if not controlled can wash into Sinclair Inlet. Some common outdoor work operations of concern are sanding, cutting, grinding, painting, material transfer, and mixing; use of oils, solvents, detergents, and degreasers. Consider the potential risks of your work and prepare accordingly. Items you may need include a spill kit, drop cloths, absorbents, rubber mats, storm drain filters, tape, tarps, brooms, or vacuums.

OUTDOOR SAND AND GRAVEL STORAGE



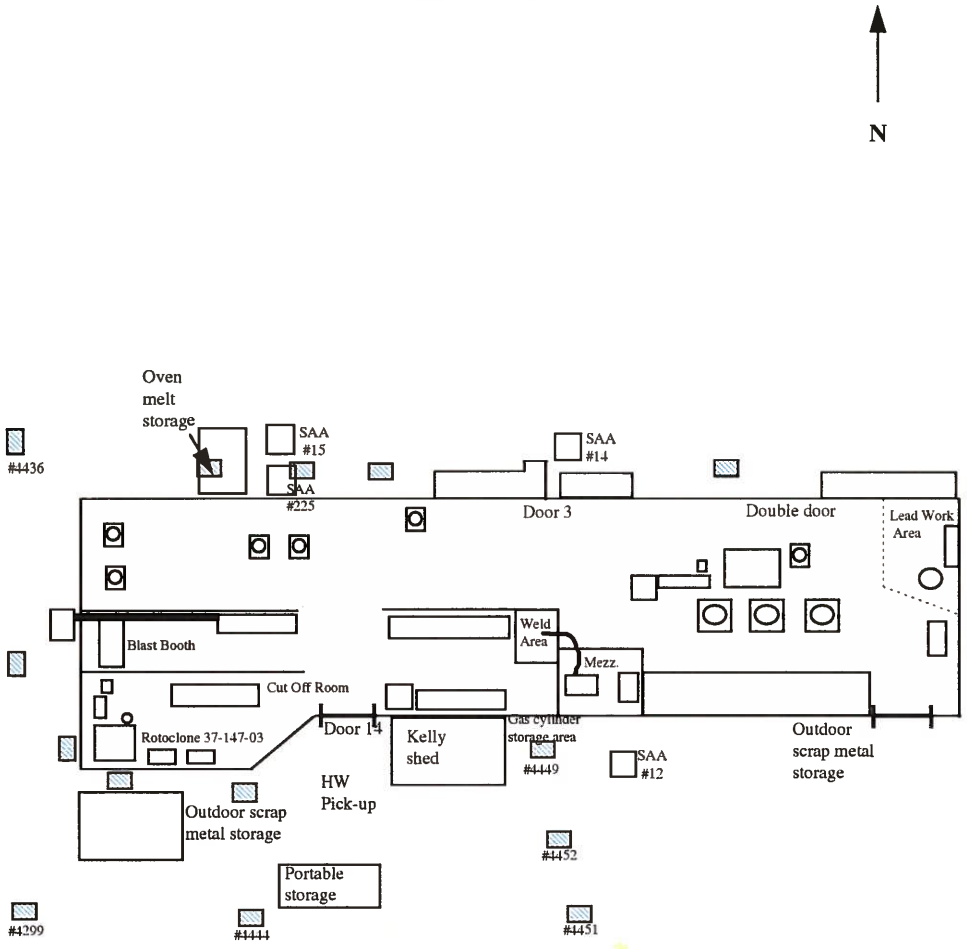
DENOTES STORM DRAINS

NOT TO SCALE

1 Sand and gravel storage has been exposed to storm water runoff for the last three years. This storage location was at the intersection of South Avenue and West Street on the west end of the Bremerton Naval Complex. Spent sandblast grit was stored in this location until September 1996, when it was moved to Building 992 (former coal storage). Recently, the sand and gravel storage was also moved to Building 992.

BUILDING 147 FOUNDARY

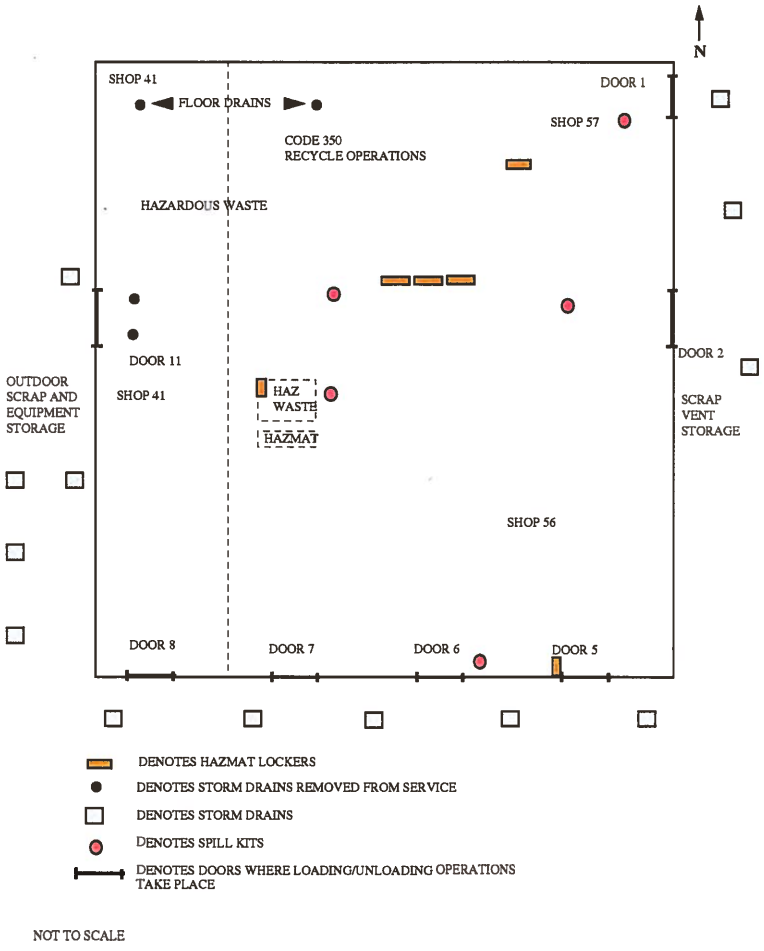
Air Siurce ID 37-147-xxx



NOT TO SCALE

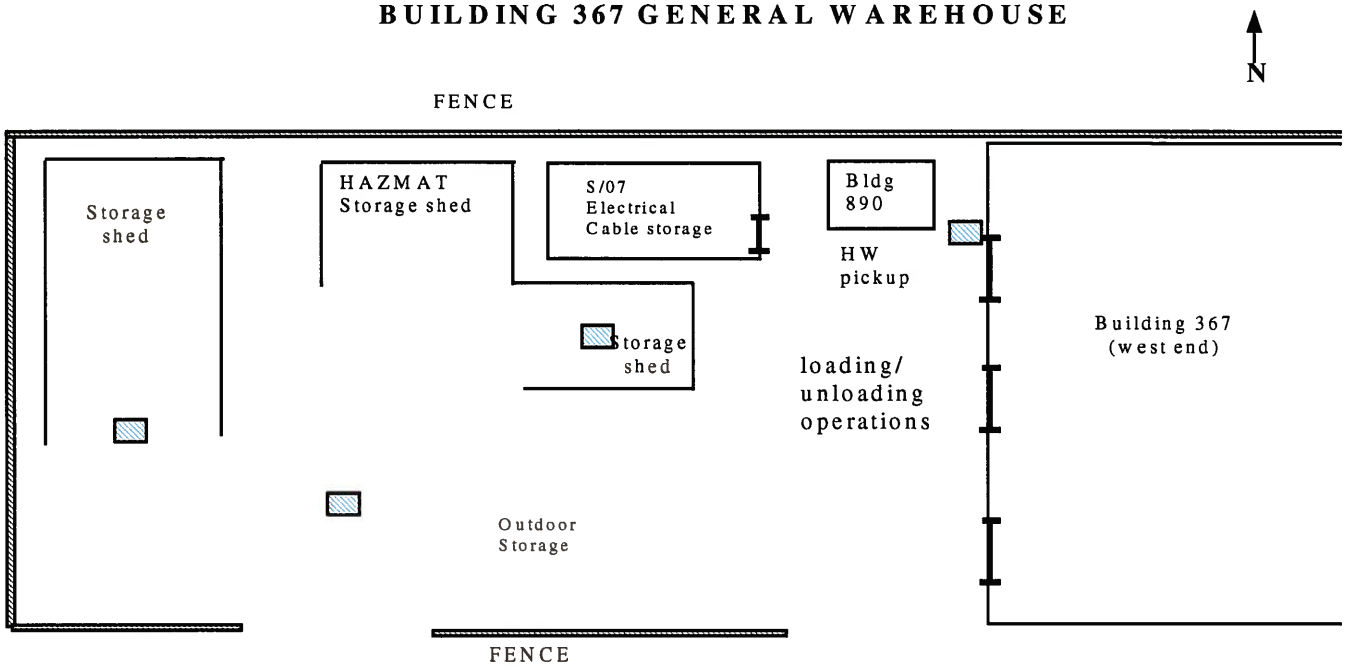
2 Lay-down areas for scrap components have been located outside Building 147, the foundry in the last five years. Items were stored on pallets and may have been covered with tarps, depending on other hazardous constituents which were identified. The area outside door 14 has been used as a temporary storage area for residue slag until it was hauled to a land fill. This practice was discontinued in June 1995. The foundary has recently (May 1998) been put out of service and is now used as a storage area.

BUILDING 107 PIPE AND BOILER SHOP



3 The lay-down area between Buildings 107 and 59 is used for storage of transformers, capacitors, other scrap electrical equipment, as well as mechanical equipment, piping assemblies, valves, and hose assemblies. PCBs, asbestos, silver, and mercury are removed from the scrap electrical equipment inside Building 107. Contents of hazmat lockers inside the building would only be exposed if spilled outside the building during loading/unloading operations. Inventory for hazmat locker contents are listed below. Building 107 demil: adhesives, spray paint, Kroil™, Mobil™ DTE 25 oil, leans cleaner, WD-40™. Electric demil: Foam adhesive, all purpose cleaner, Rustsolvo™, lens cleaner, detergent, Dykem™ remover and thinner, gasket remover, lead-free gasoline, PCB cleaner, water preservative, isopropyl alcohol, dishwashing liquid, kerosene, hand cleaner, Kroil™, spray varnish, enamel spray paint, Mobil™ DTE 25 oil, rust dissolver, penetrating oil, hand cream, silicone sealant, primer, multi-purpose cleaner, Stihl™ 2-cycle engine oil, thinner dope & lacquer-cellulose nitrate, Tri-flow™, cutting oil, Uni-paint™ markers, hand cleaner, and WD-40. Saw room: Foam adhesive, spray paint, leak detection compound.

BUILDING 367 GENERAL WAREHOUSE



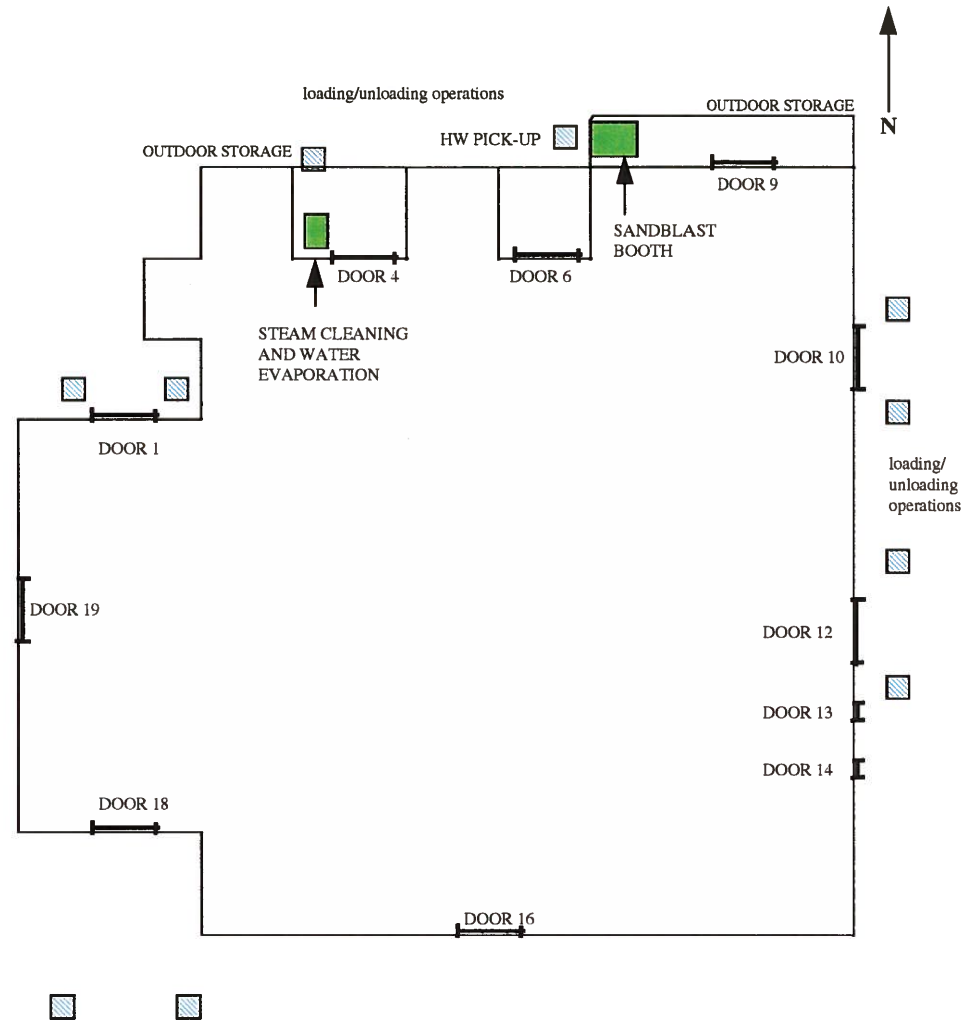
DENOTES STORM DRAINS

DENOTES BUILDING DOORS

NOT TO SCALE

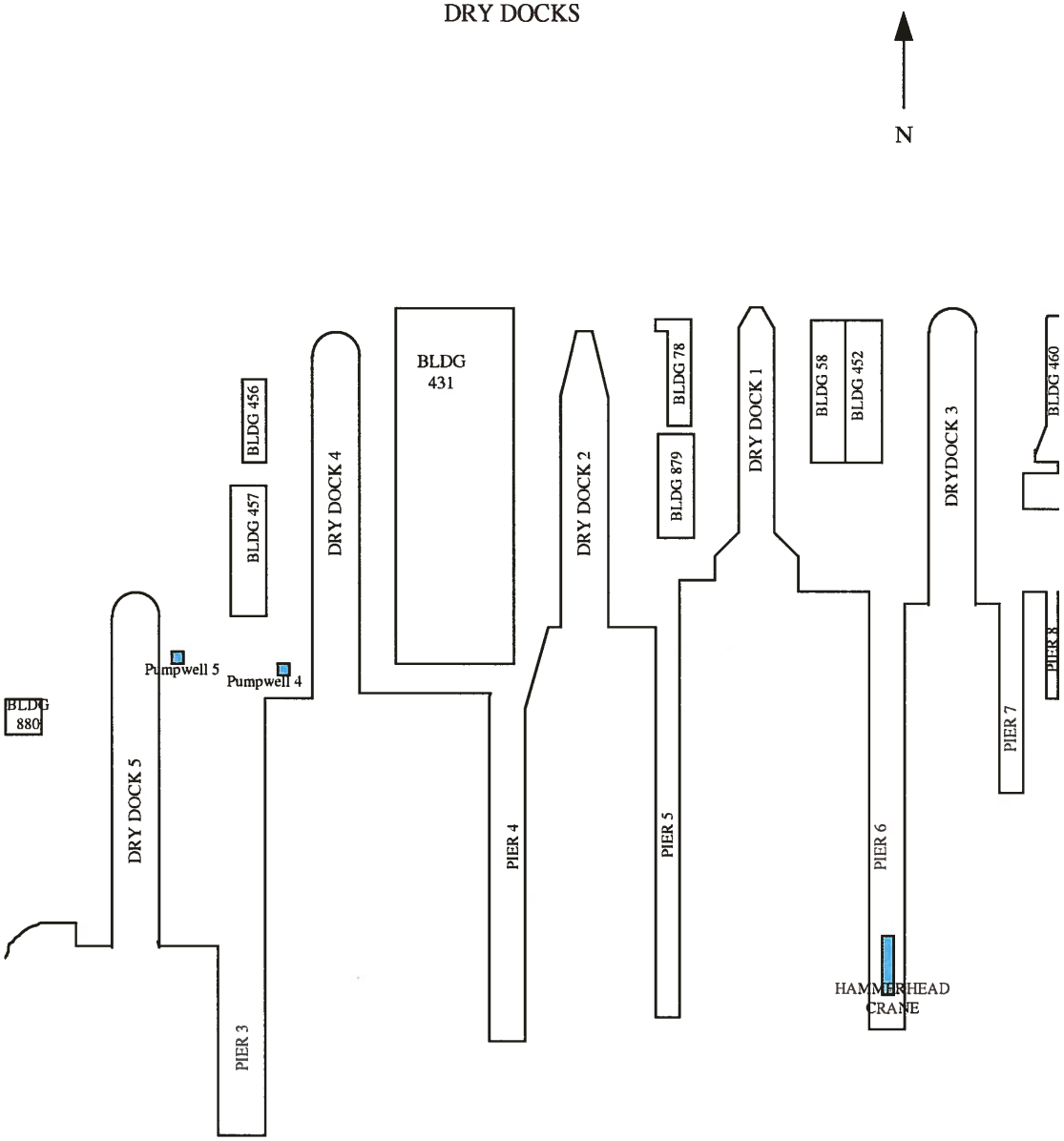
4 Paved, outdoor storage is used for various materials and equipment at this warehouse, Building 367.

BUILDING 427 ELECTRIC SHOP



5 Electrical components and equipment are stored in lay-down areas on the north side of Building 427, the electric shop.

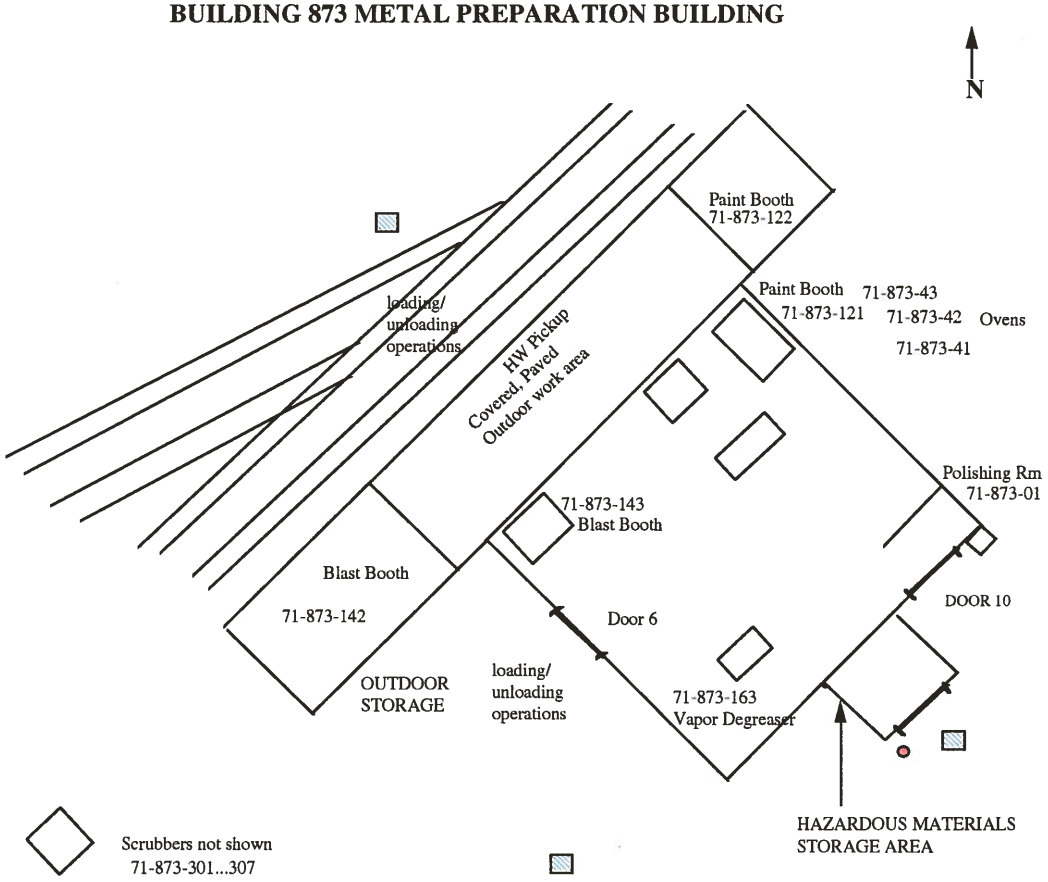
DRY DOCKS



NOT TO SCALE

6 Galvanized buildings and structures are located throughout the Bremerton Naval Complex. Refueling houses are used and stored on the west side of Dry Docks 1 through 5. These may be a source of zinc in the controlled industrial area. Quonset™ huts and other buildings and structures are in use throughout the Naval Complex and may contribute zinc to all Shipyard outfalls.

BUILDING 873 METAL PREPARATION BUILDING



OUTDOOR STORAGE

DENOTES SPILL KIT

DENOTES STORM DRAINS

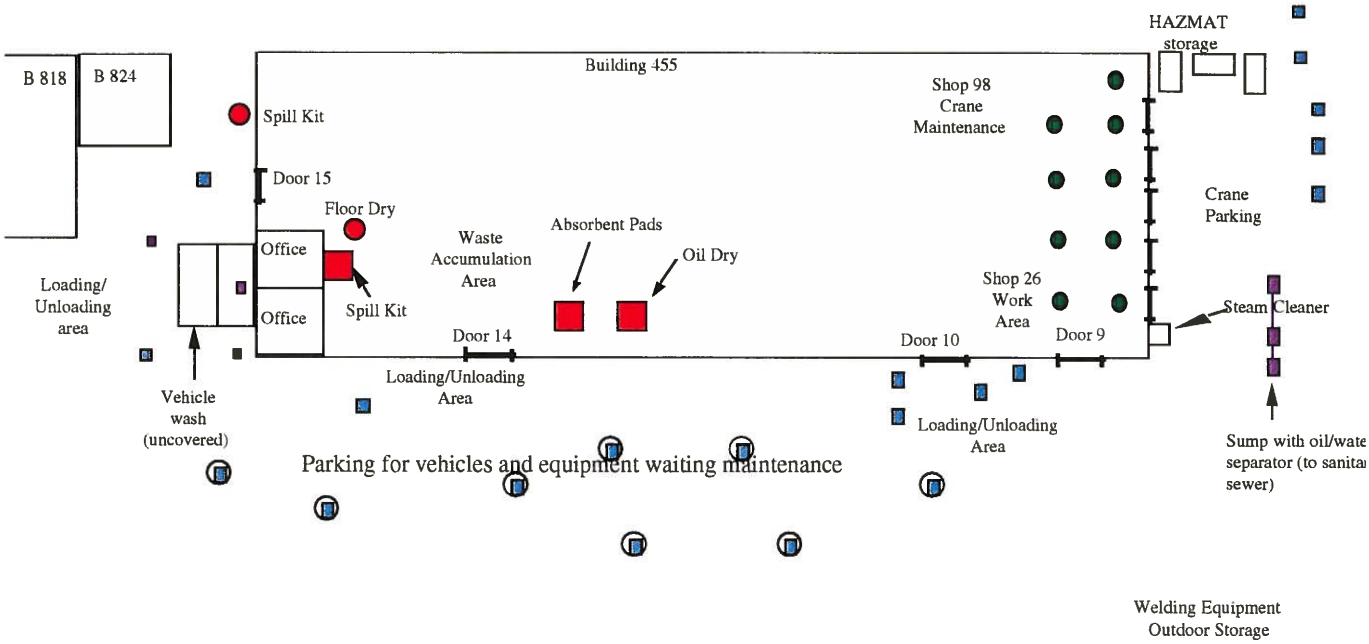
DENOTES RAIL TRACKS

DENOTES DELIVERY DOORS

NOT TO SCALE

7 An outdoor storage area south of Building 873 contains various equipment belonging to the paint shop.

BUILDING 455 EQUIPMENT MAINTENANCE SHOP



Denotes building doors

Denotes storm drains

Denotes drains with Streamguard™ Filters

Denotes storm drains Removed from service

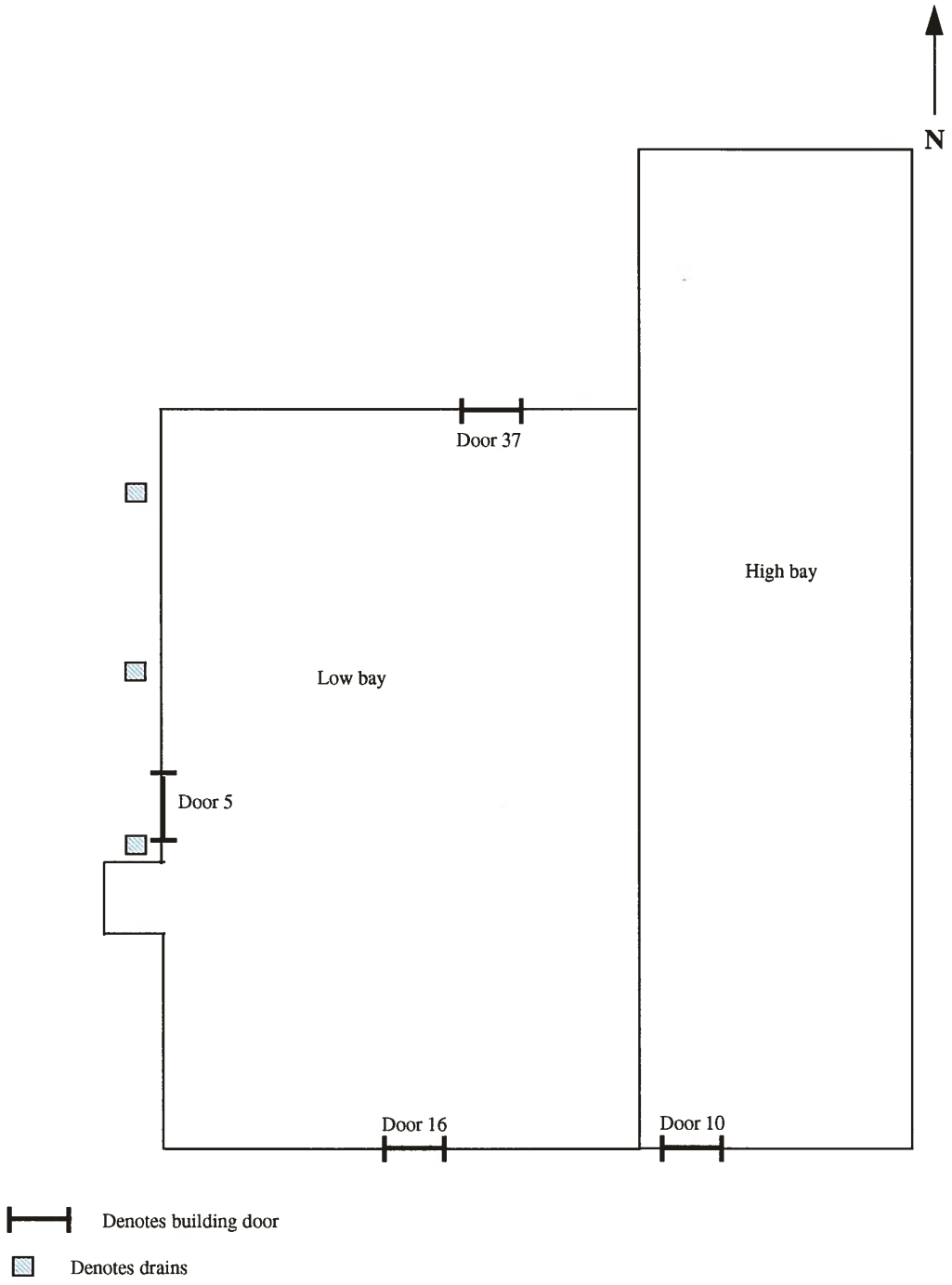
Drains to sanitary sewer

NOT TO SCALE

Note:
HW drums are banded together with pallets on top and bottom which are again banded together

8 Building 455, equipment maintenance, is operated by the transportation department. Welding equipment is stored outside the southeast corner of the building. Cranes waiting maintenance are stored outside the east end of the building. Heavy equipment such as straddle trucks, forklifts, garbage trucks, train engines and flatbed trucks waiting maintenance are stored outside the south side of the building. Sometimes fluid leaks occur in the south parking area. Until recently (August 1997), oil dry, when applied to spills and leaks, was not consistently cleaned up. This area is now inspected and cleaned on a daily basis as a SWPPP corrective action.

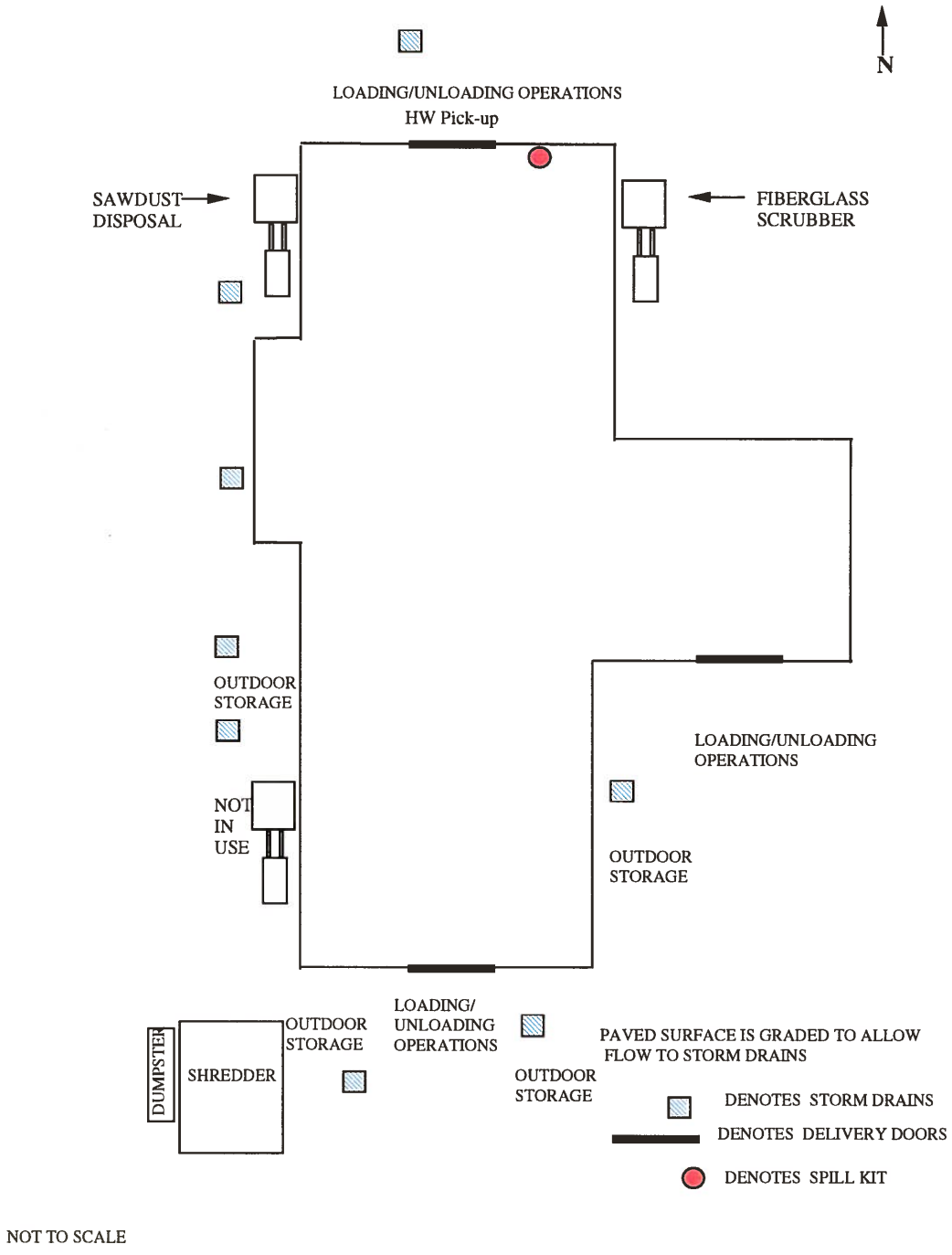
Building 856 Nuclear Repair Shop



Not to scale

9 New equipment and reactor compartment disposal (RCD) rollers to be overhauled at Building 469 are located in the outdoor storage at north end of Building 856. Potential leaks of petroleum products could occur from the RCD rollers.

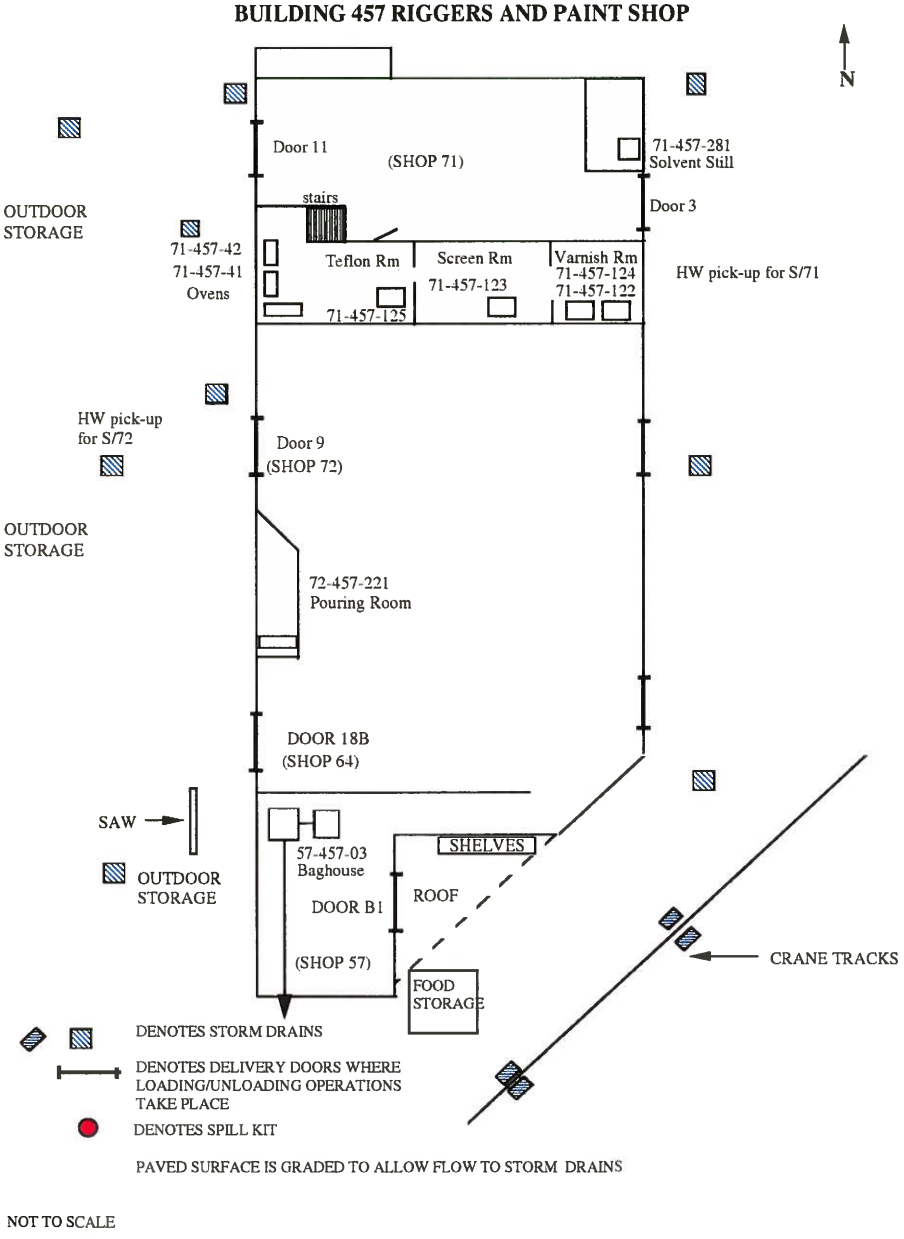
BUILDING 851 WOODWORKING SHOP



NOT TO SCALE

10 Stacks of treated lumber are stored outside Building 851. Uncovered metal bins in this area are used to collect scrap wood. Due to fire codes, the Shipyard rarely purchases untreated wood. Sawdust spills during disposal operations may expose stormwater to chemicals used in treated wood.

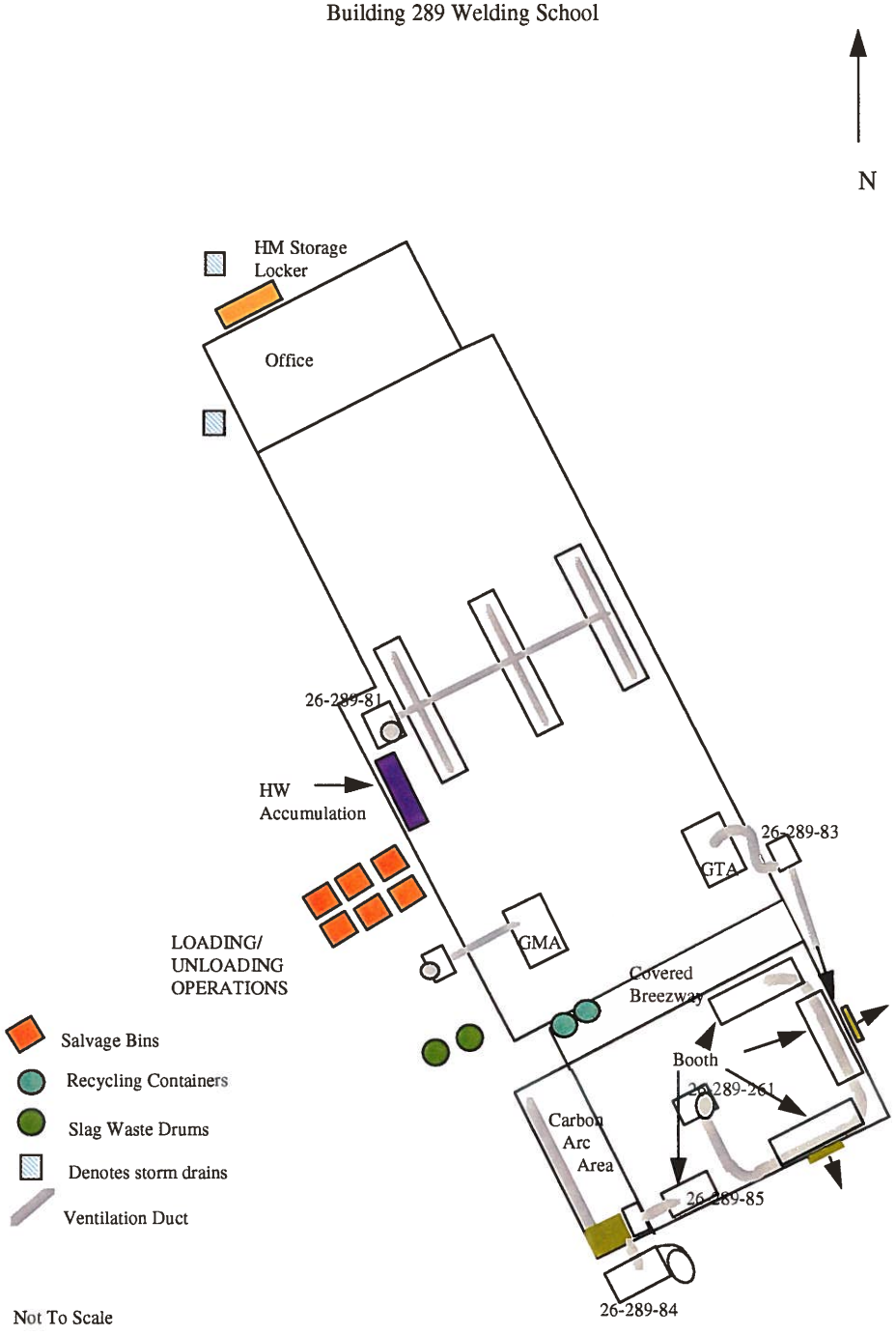
BUILDING 457 RIGGERS AND PAINT SHOP



NOT TO SCALE

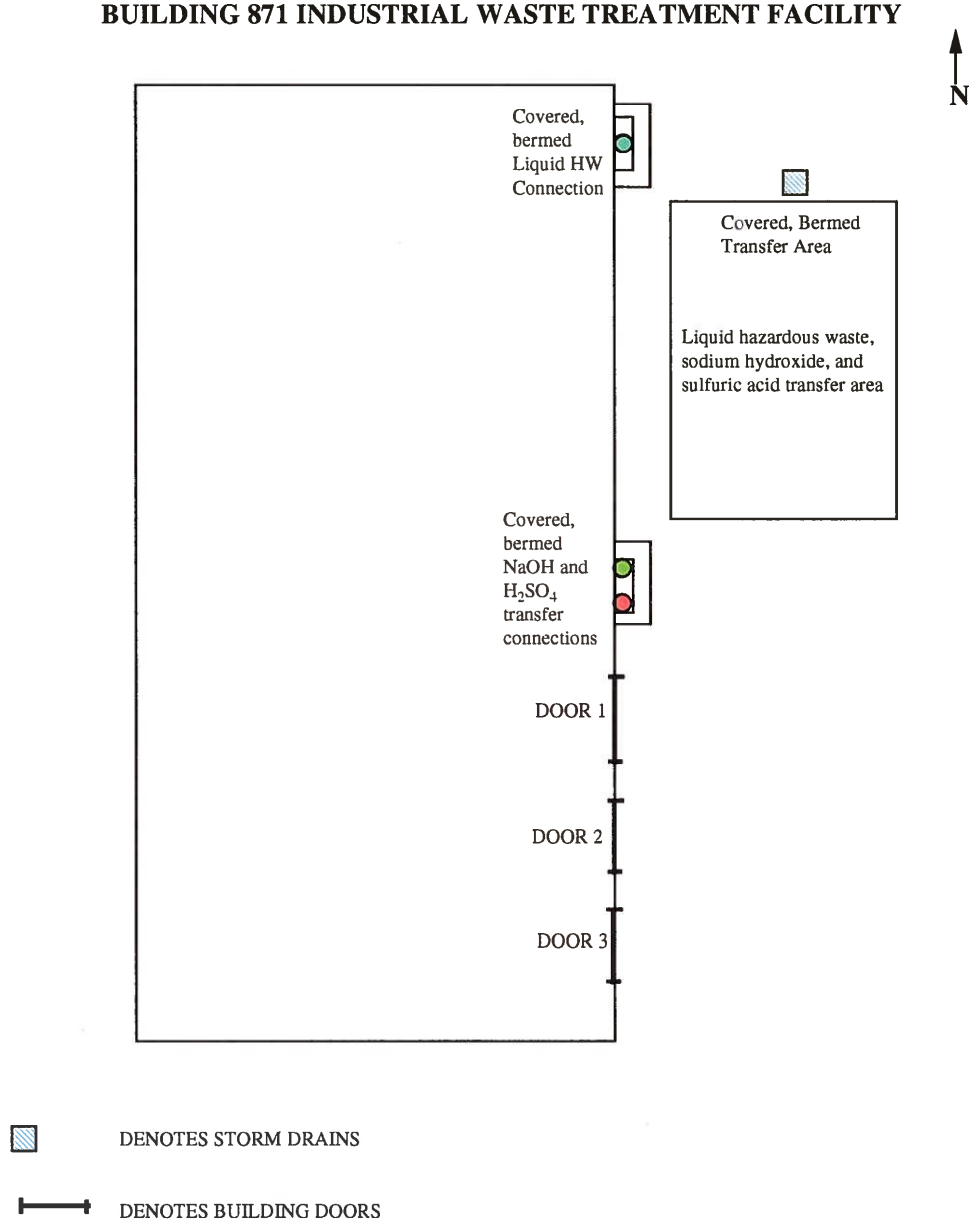
11 Material and equipment stored outside Building 457 which is exposed to storm water, includes rigging gear, treated wood, tool lockers, and a hazmat locker. Rigging gear is stored to the west of this building. Products used on rigging gear which may be exposed to storm water include: Whitmore™ Wire Rope Lubricant (MSDS 4362), Lubriplate™ Grease (MSDS 3059), wire rope lubricant (MSDS 4359), Moly Kote™ G-N Paste (MSDS 2752), JetLube™ (MSDS 2571), and Kroil™ (MSDS 2813). The woodworkers have a work area on the west side of this building where treated wood is sometimes stored. Shop 57 insulators store tool lockers on open shelves outside of door 1. The hazmat locker inventory includes: adhesives, Certane™ 1000 Topcoat, Certane™ 2075 Raincoat, 50A CP Chil Seal™, fibrous adhesive, sealer, vinyl cement, hand cleaner, lagging adhesive and coating, lens cleaner. Locker internals are not exposed to storm water.

Building 289 Welding School



12 Small waste containers outside Building 289 are exposed to storm water. Waste containers of scrap metals are stored outside the welding school. The scrap is then taken for recycling once the containers are full.

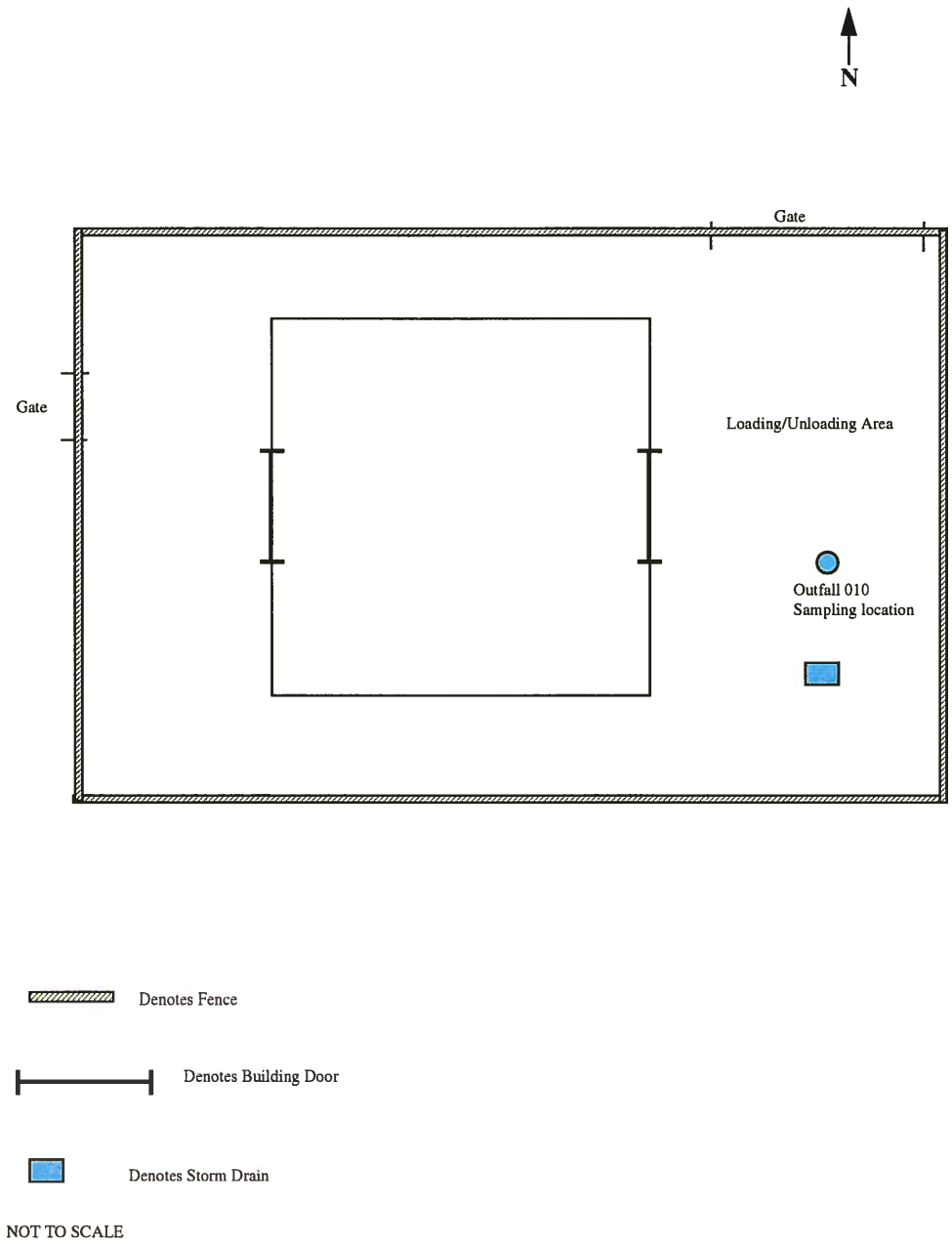
BUILDING 871 INDUSTRIAL WASTE TREATMENT FACILITY



NOT TO SCALE

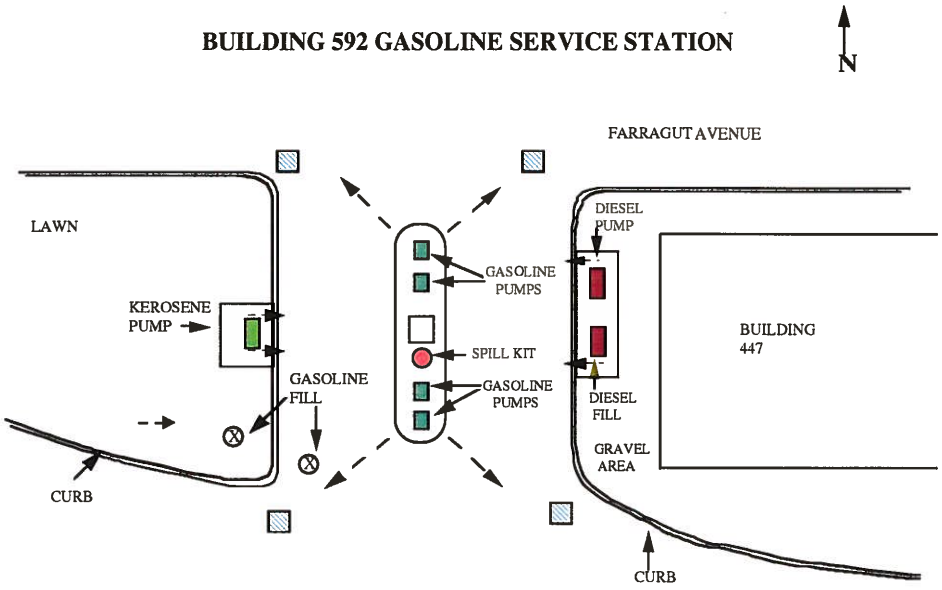
13 Connections on the outside of the building for vendor transfer of sodium hydroxide, and sulfuric acid and connections for the transfer of liquid hazardous waste have been covered to prevent exposure to storm water.

BUILDING 992 HAZARDOUS WASTE ACCUMULATION AREA DRY DOCK 6



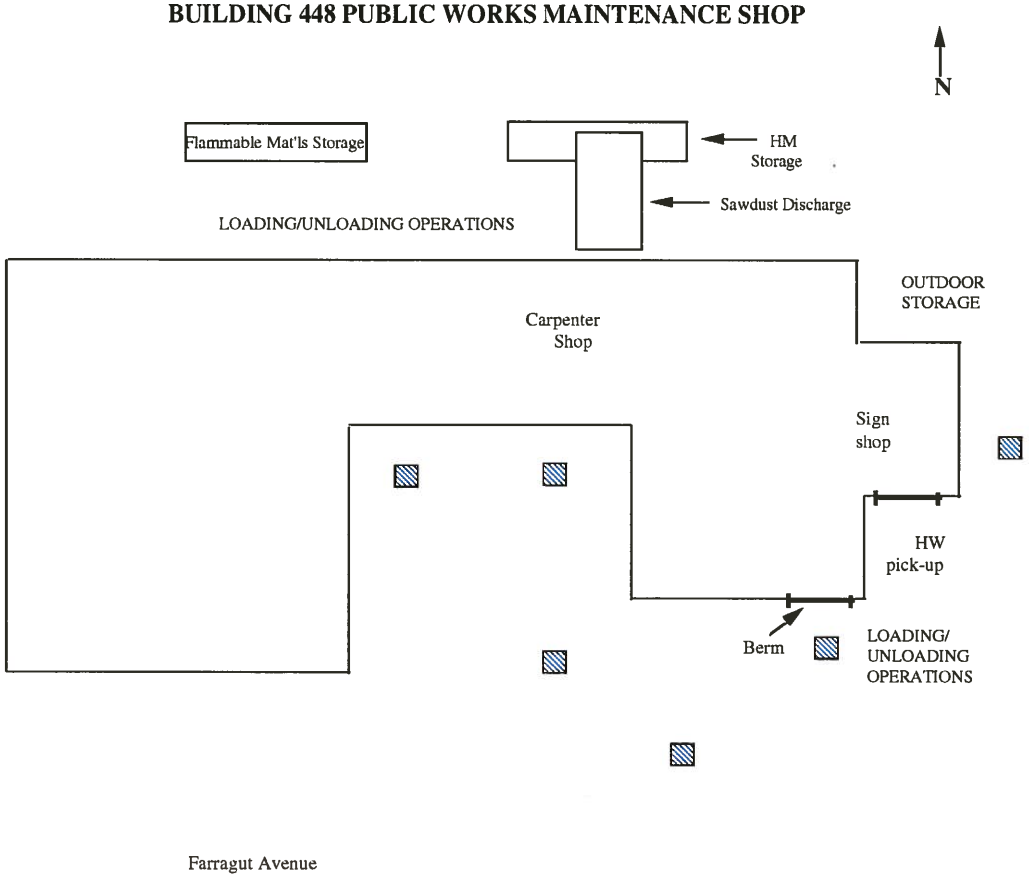
14 New unfilled drums for hazardous waste are stored outside the hazardous waste storage facility at Dry Dock 6. Covered 40 yard roll-off containers are sometimes designated as 90 day storage areas.

BUILDING 592 GASOLINE SERVICE STATION



15 Building 592, the gasoline service station, is exposed to rainfall. The new concrete pads installed around the diesel and kerosene pumps are bermed to direct flow onto the main pad. The pads were installed as a SWPPP corrective action. Before the pads were installed, drips and spills would fall on the ground. Spills sometimes occur. Oil dry is available to place on spilled materials. Filters with oil absorbent material are installed in the four catch basins which drain this facility. The filters are designed to capture residual petroleum product removed by storm water.

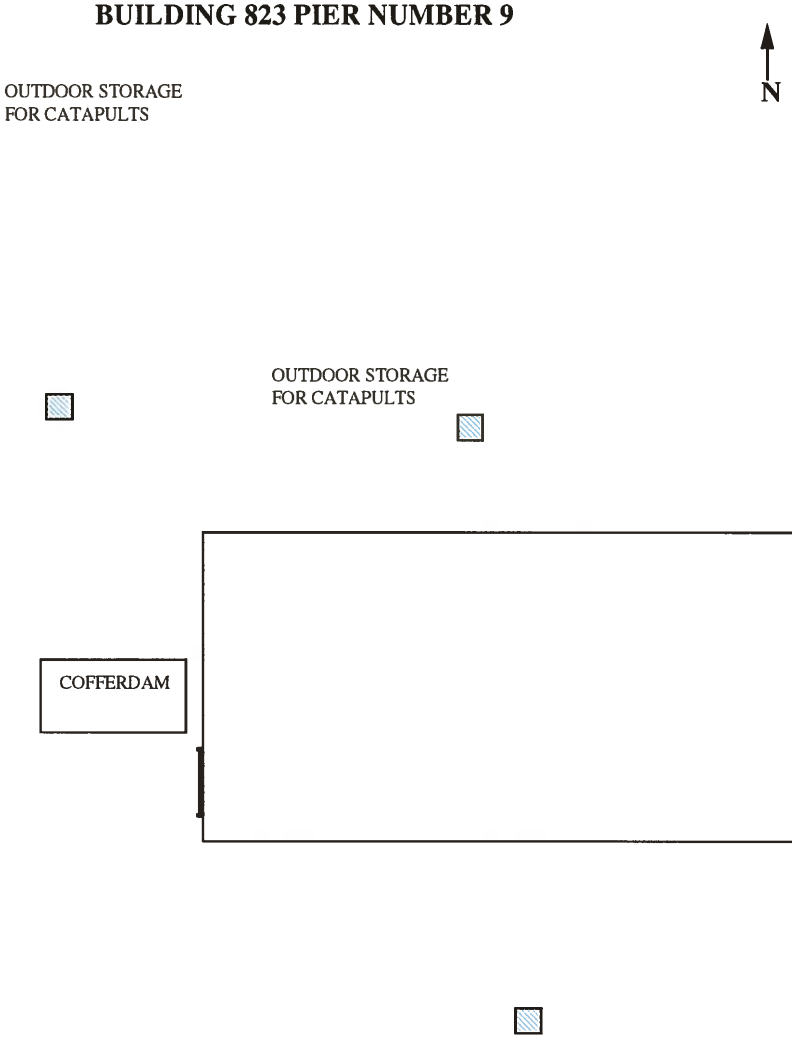
BUILDING 448 PUBLIC WORKS MAINTENANCE SHOP



NOT TO SCALE

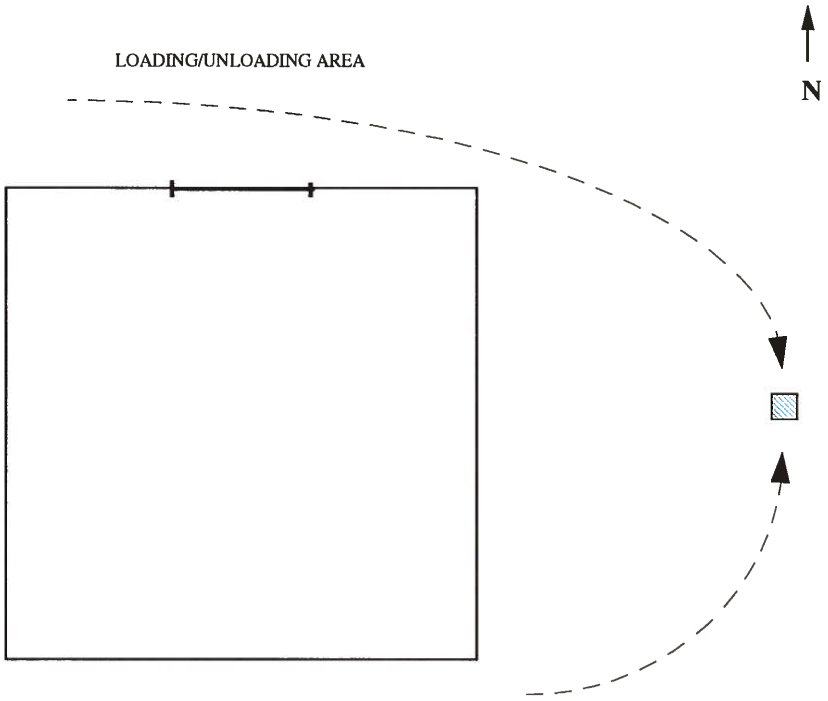
16 Various activities performed by Shop 07 maintenance are operated from Building 448 Various kinds of equipment are stored outside this building, including storage lockers containing hazardous materials. Locker internals are not exposed to storm water. Sawdust spills sometimes occur during off-loading operations on the north side of the building, potentially exposing storm water to treated wood.

BUILDING 823 PIER NUMBER 9



17 When this facility is in use, catapult and arresting gear, is stored in outdoor lay-down areas. When in use, equipment with burnt oil is exposed to storm water.

BUILDING 994 HAZARDOUS WASTE ACCUMULATION DRY DOCK 3



DENOTES FLOW OF STORM WATER

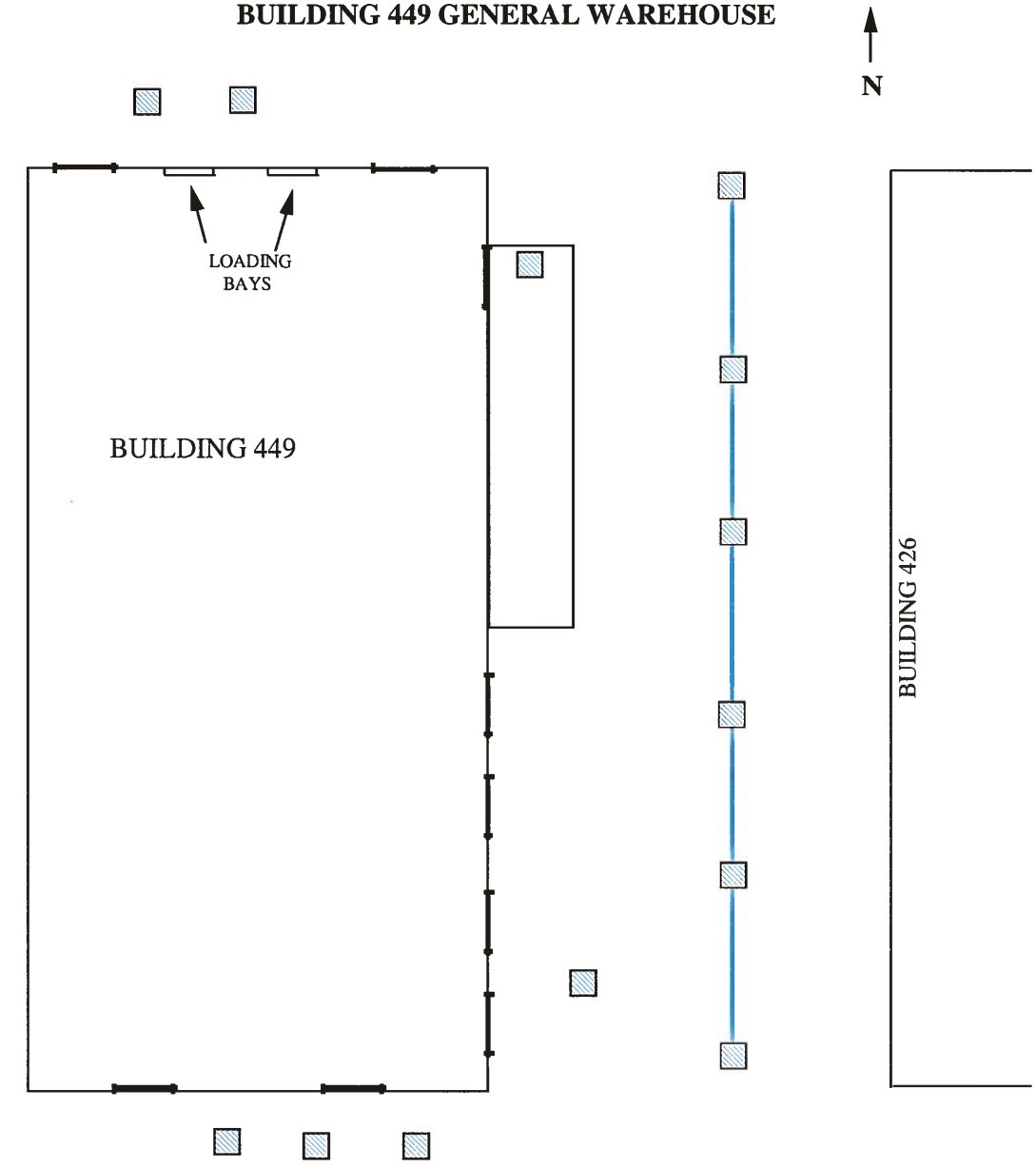
DENOTES BUILDING DOOR

DENOTES STORM DRAIN

NOT TO SCALE

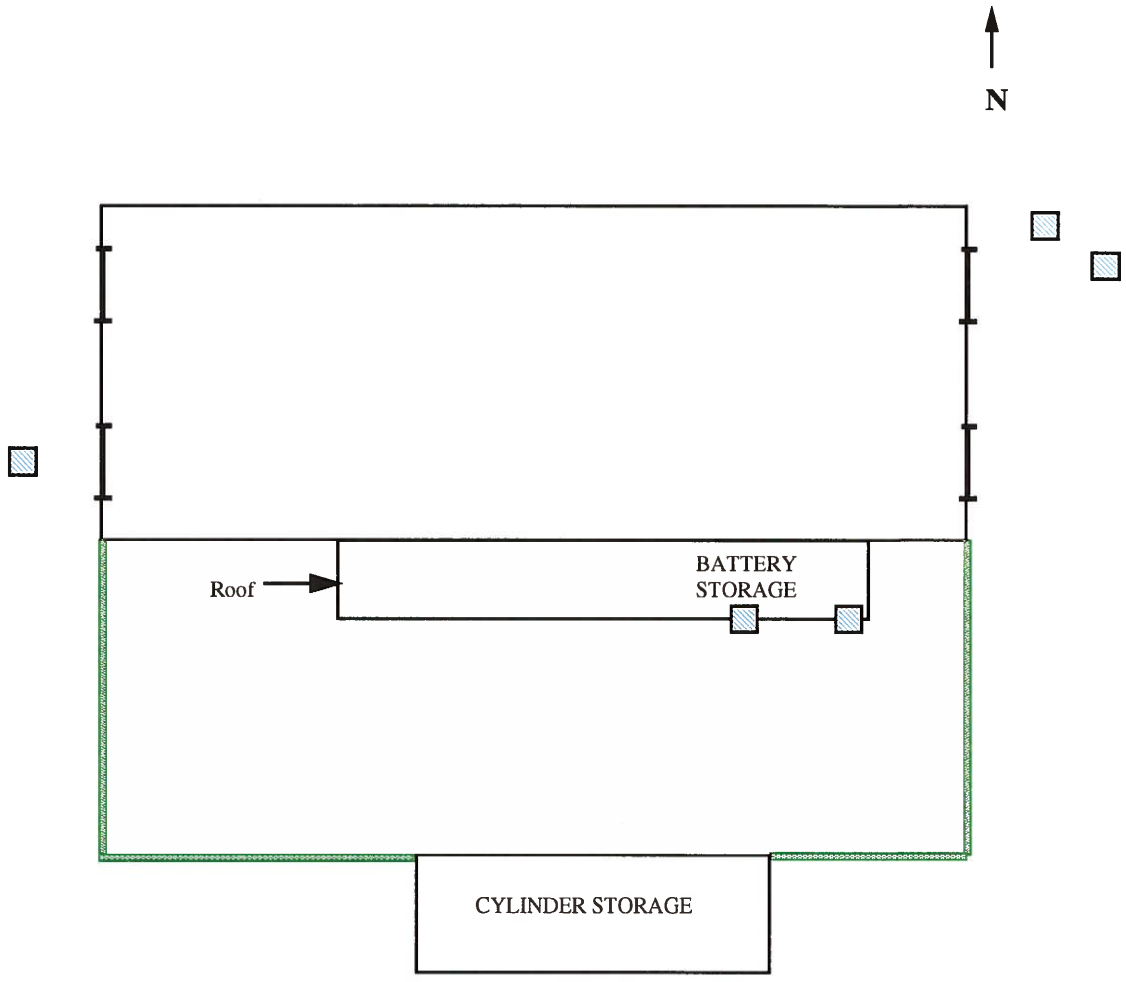
18 New 55 gallon drums and one hazmat locker are stored outside Building 994, outside the hazardous waste storage facility at Dry Dock 3. Covered 40 yard roll-off containers are sometimes designated as 90 day storage areas.

BUILDING 449 GENERAL WAREHOUSE



19 Outdoor storage on east side of Building 449 is covered with a roof. One storm drain is located in the area. No hazardous materials are stored in this location.

BUILDING 494 GENERAL WAREHOUSE



DENOTES WAREHOUSE DOOR

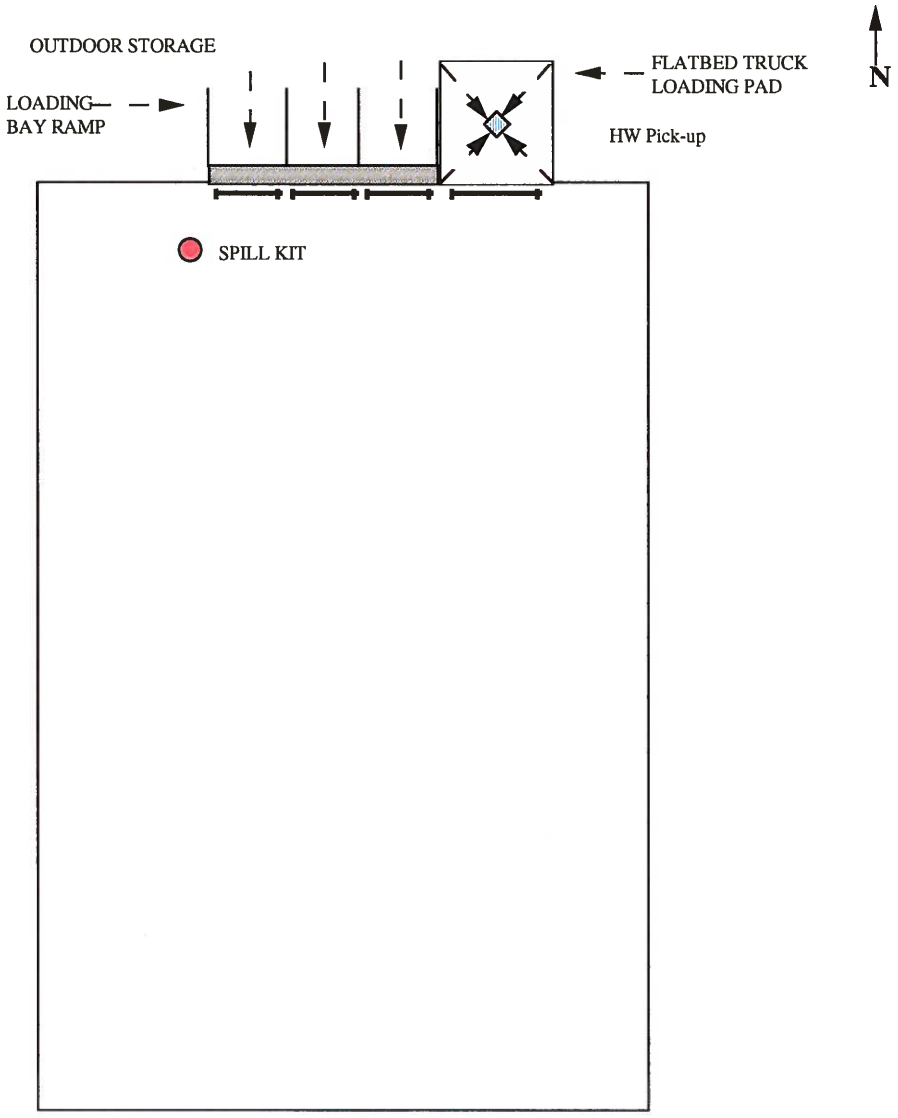
DENOTES STORM DRAIN

DENOTES CHAIN LINK FENCE

NOT TO SCALE

20 Outdoor storage on the south side of Building 494 is covered with a roof. Three storm drain catch basins are located in this area. Empty submarine batteries are stored here.

BUILDING 513 GENERAL WAREHOUSE



DENOTES STORM DRAIN

DENOTES WAREHOUSE DOOR

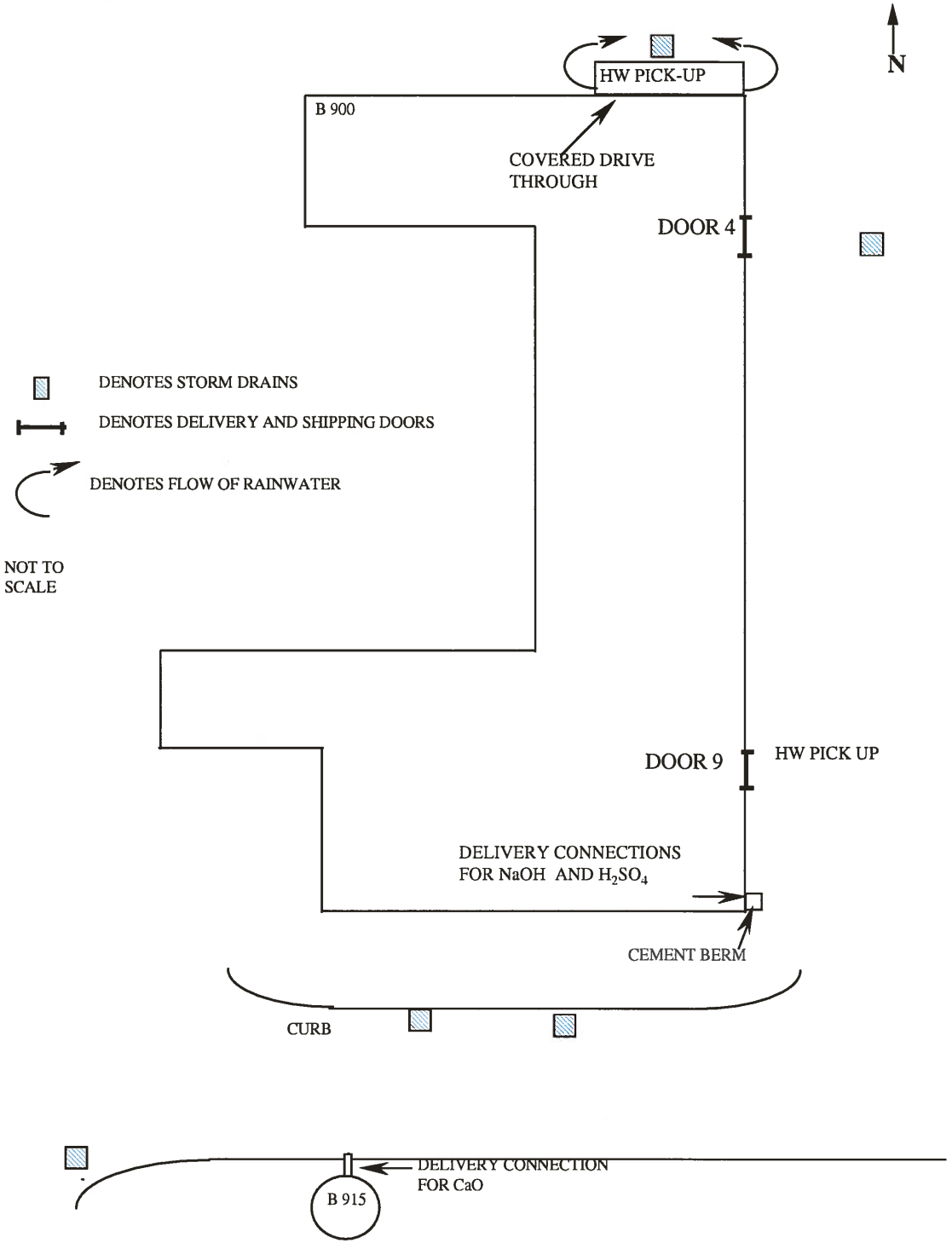
DENOTES SPILL KIT

DENOTES FLOW OF WATER

NOT TO SCALE

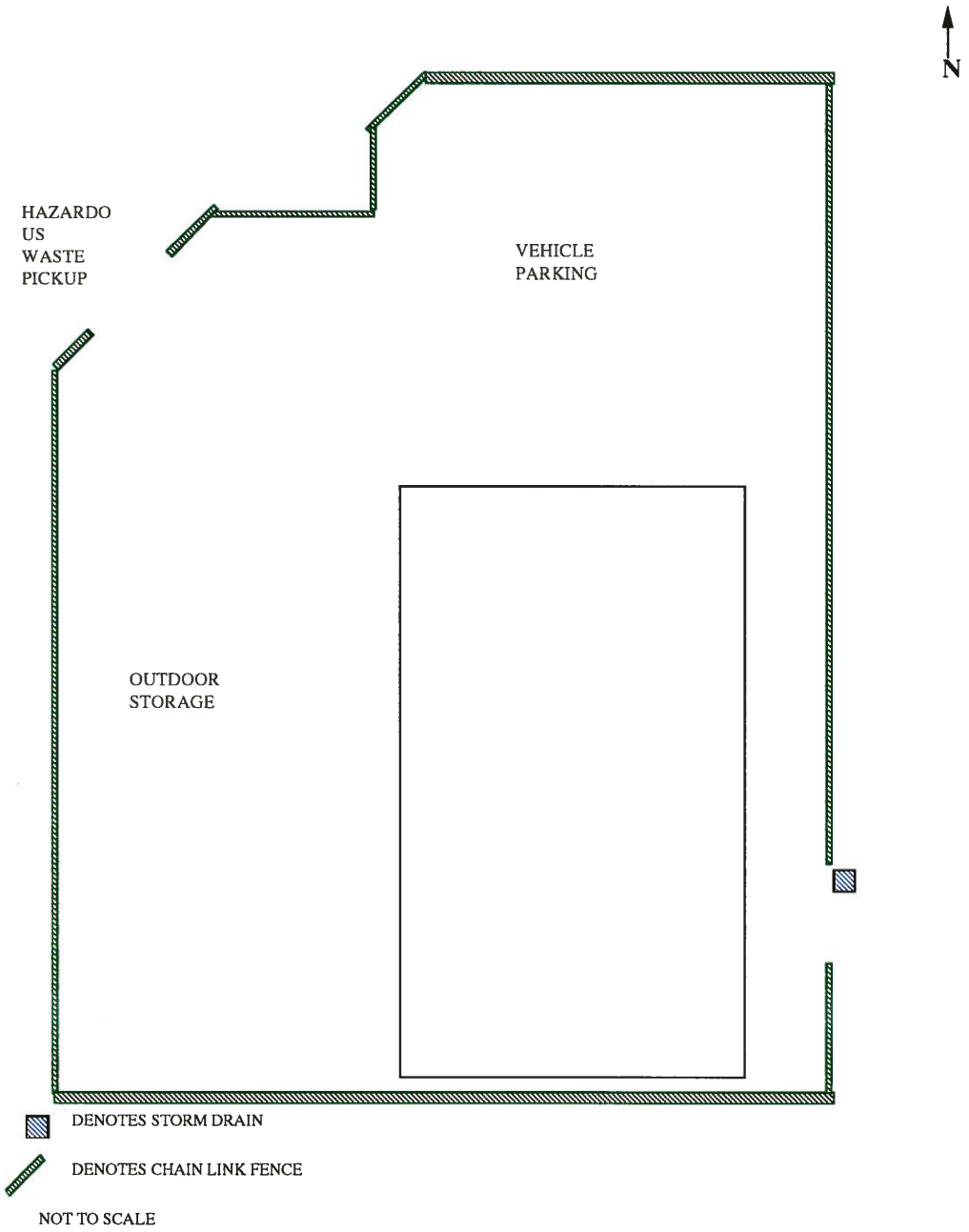
21 The lay-down area at north end of Building 513 generally contains a large number of pallets.

BUILDINGS 900 STEAM PLANT AND 915 LIME SILO



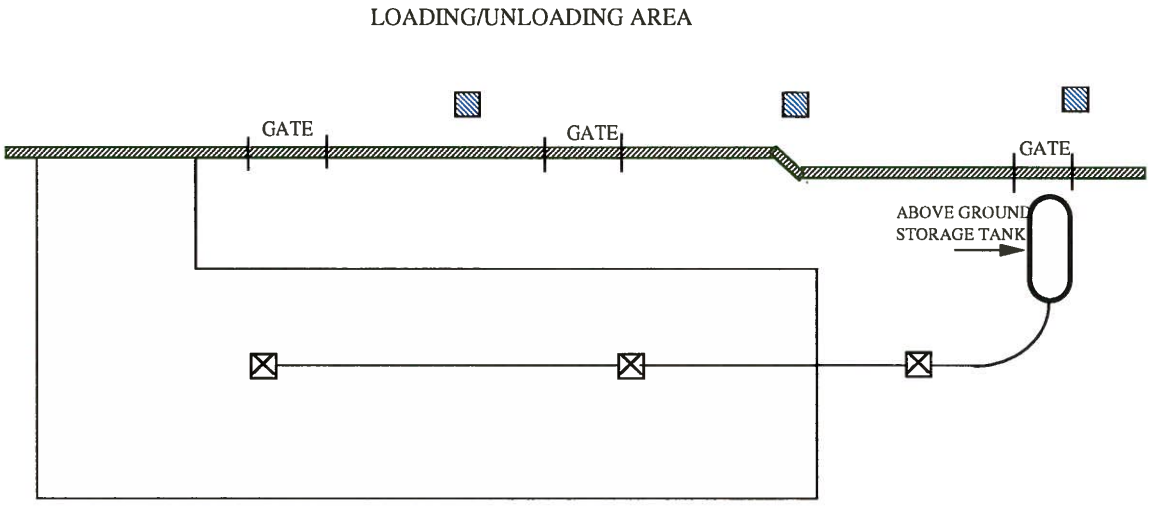
22 Connections for sodium hydroxide, and sulfuric acid are located on the east side of Building 900. These connections, which are on the outside of the building for vendor transfer of hazardous liquids, are exposed to storm water. Concrete catch pans located under the connections drain to Building 912 wastewater treatment plant.

BUILDING 550 NISMF OFFICE



23 The paved, fenced storage area on the west side of Building 550 contains forklifts, a crane, scrap metal bins, and a covered, bermed storage area for gasoline and diesel fuels. A spill locker is located next to the fuel handling area. An enclosed shed contains accumulated hazardous waste. Other equipment, such as rigging gear, is stored inside sheds or storage and cargo containers.

BUILDING 944 HAZARDOUS WASTE HANDLING FACILITY



DENOTES CHAIN LINK FENCE

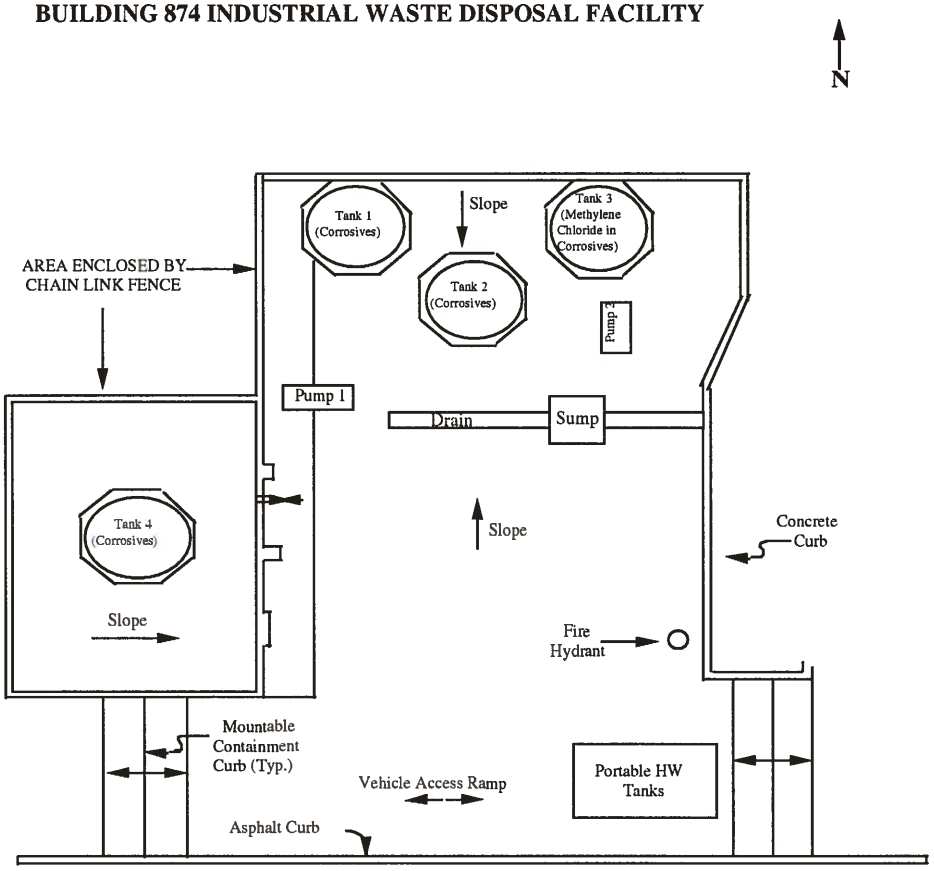
DENOTES STORM DRAIN

DENOTES DRAINS TO TANK

NOT TO SCALE

24 Uncovered storage of sealed 55 gallon drums at Building 944 only occurs when covered storage is filled. All storm water in the fenced area of this facility is collected in an above-ground storage tank. Drains in the loading/unloading area discharge to Sinclair Inlet.

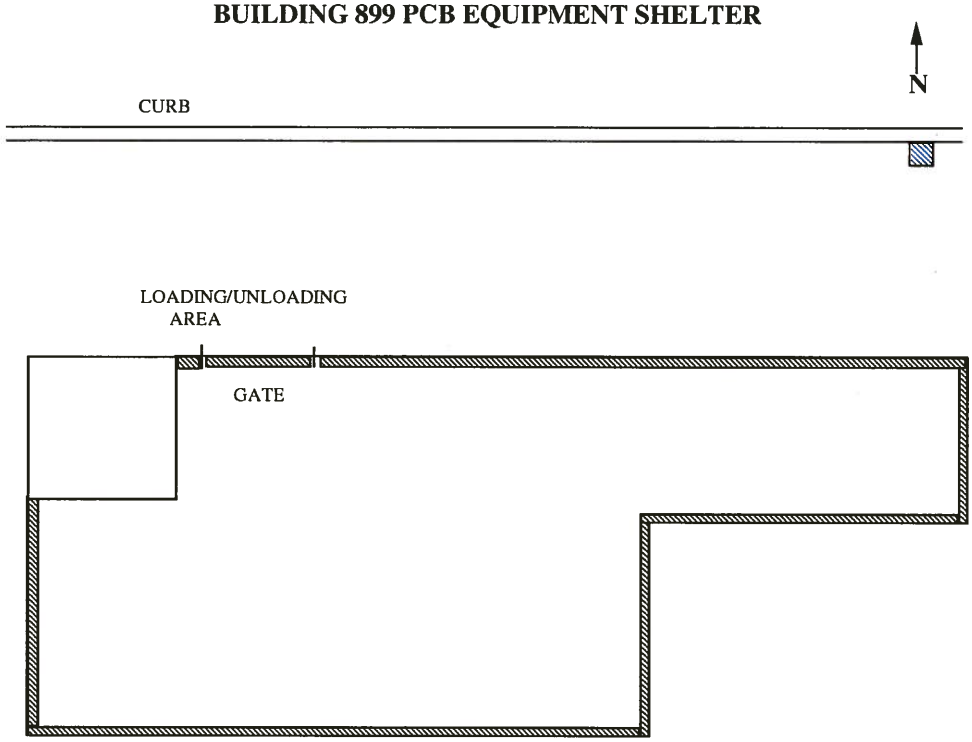
BUILDING 874 INDUSTRIAL WASTE DISPOSAL FACILITY



NOT TO SCALE

25 Four permanently installed 10,000 gallon above ground liquid hazardous waste tanks are located at Building 874. Tank connections are exposed to storm water which is collected in a sump inside a bermed area. This is analyzed for pollutants prior to discharge to the sanitary sewer. Liquid hazardous waste which has been collected in portable tanks is transported to this location by straddle trucks. The waste is transferred inside a containment area (outside the bermed area) protected with an impervious surface. Liquid waste is collected by a vendor for off-site disposal.

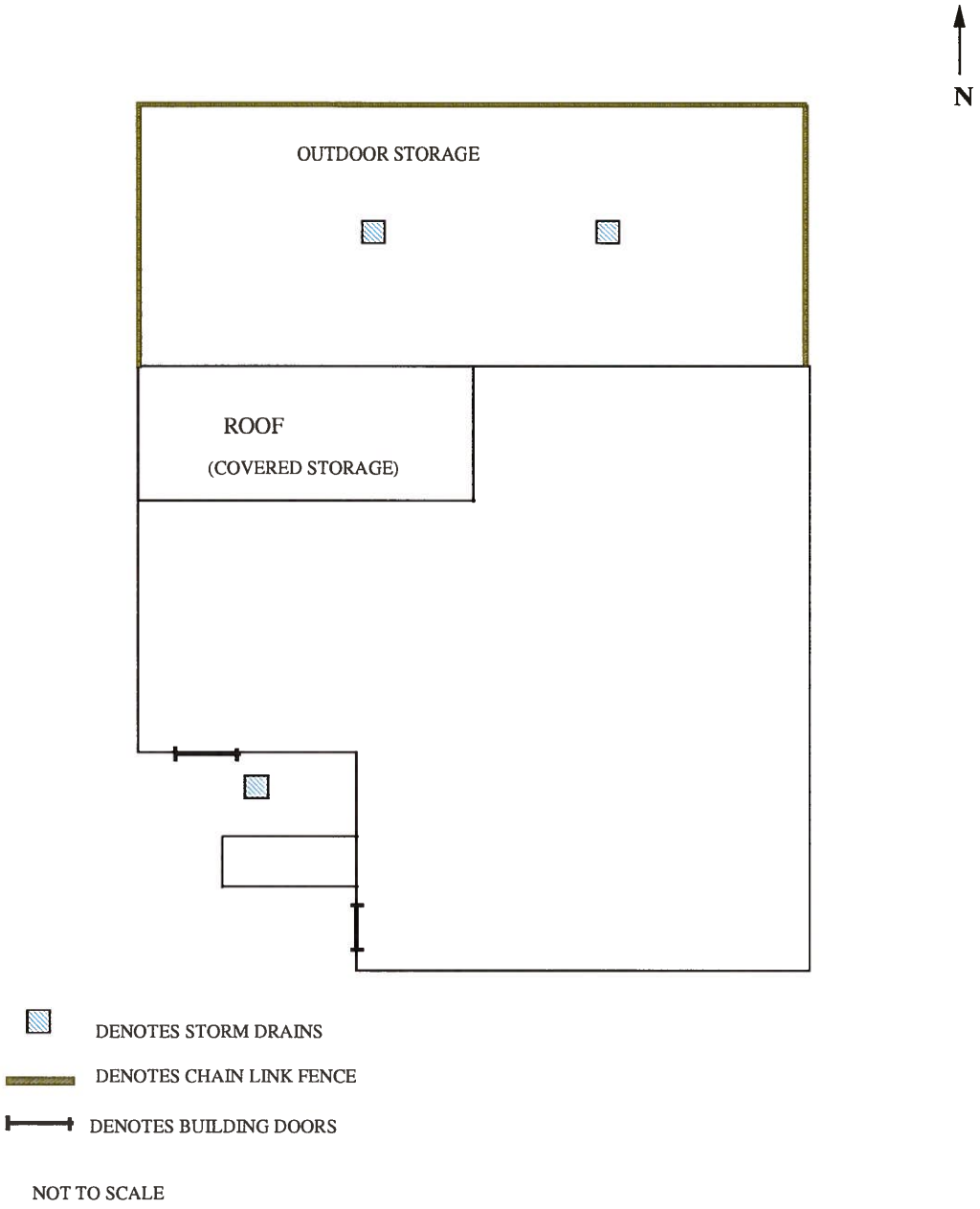
BUILDING 899 PCB EQUIPMENT SHELTER



NOT TO SCALE

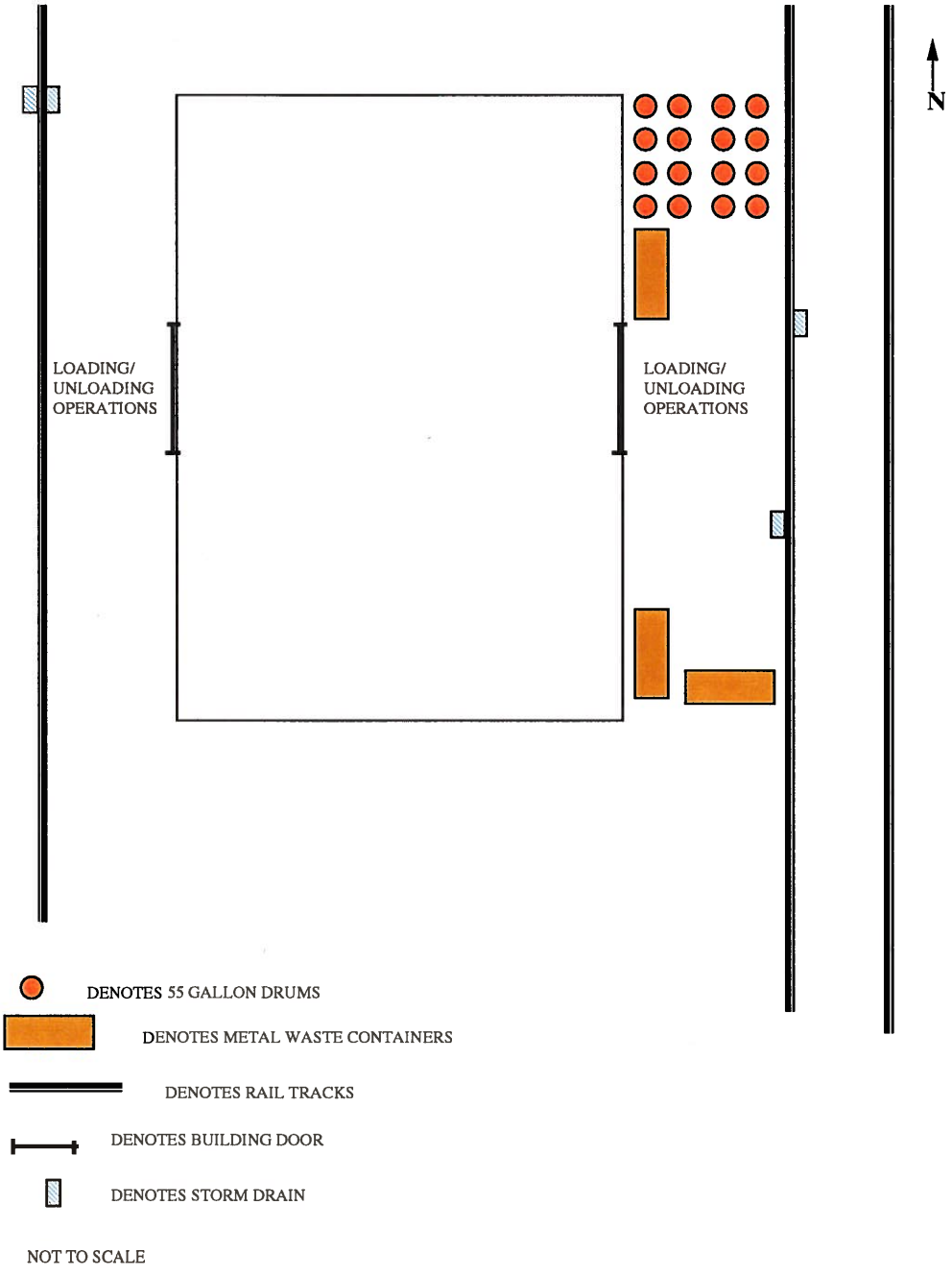
26 PCB waste and contaminated transformer oil are stored under a shelter at Building 899. The floor of the building is sloped so that rain water which gets into the building will not run out into the storm drain northeast of the building. This building has a roof but no side walls.

BUILDING 846 EXCHANGE RETAIL STORE



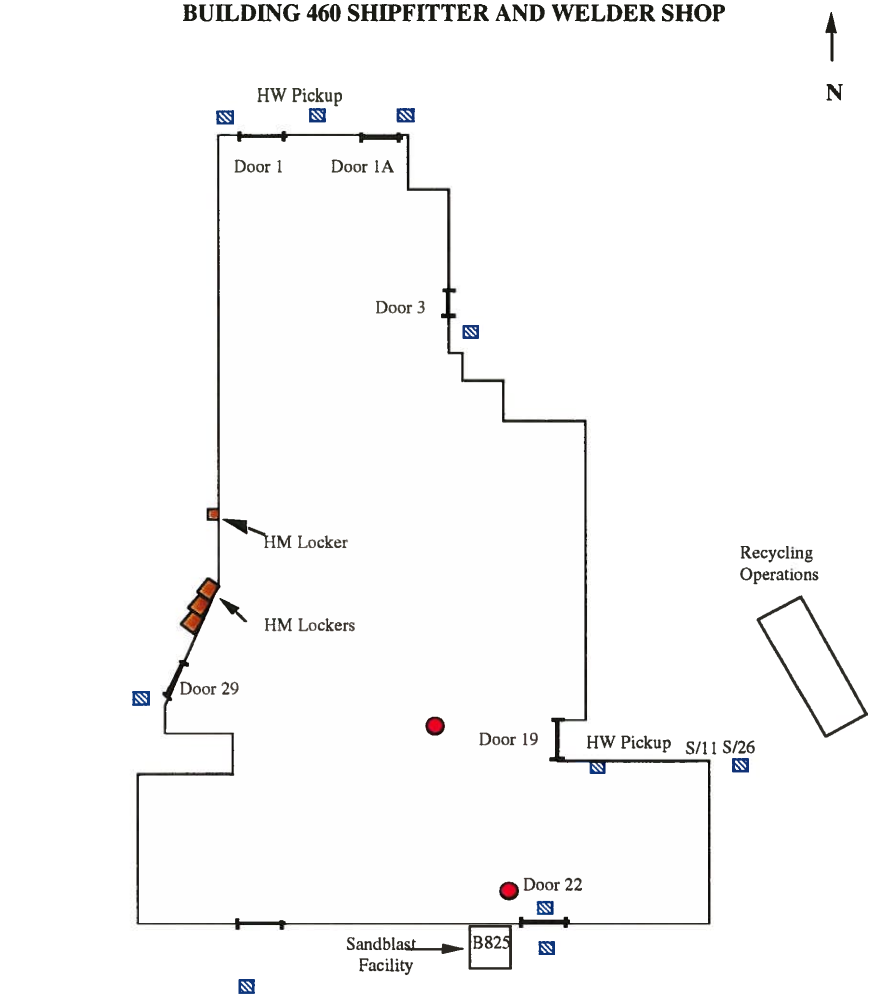
27 Garden shop supplies are stored under shelter at Building 864, the Navy Exchange garden shop. Contents would only be exposed to storm water if containers were broken or spilled and not cleaned up. Packaged items such as fertilizer and potting soil are exposed to storm water in the uncovered storage area.

BUILDING 993 HAZARDOUS WASTE ACCUMULATION



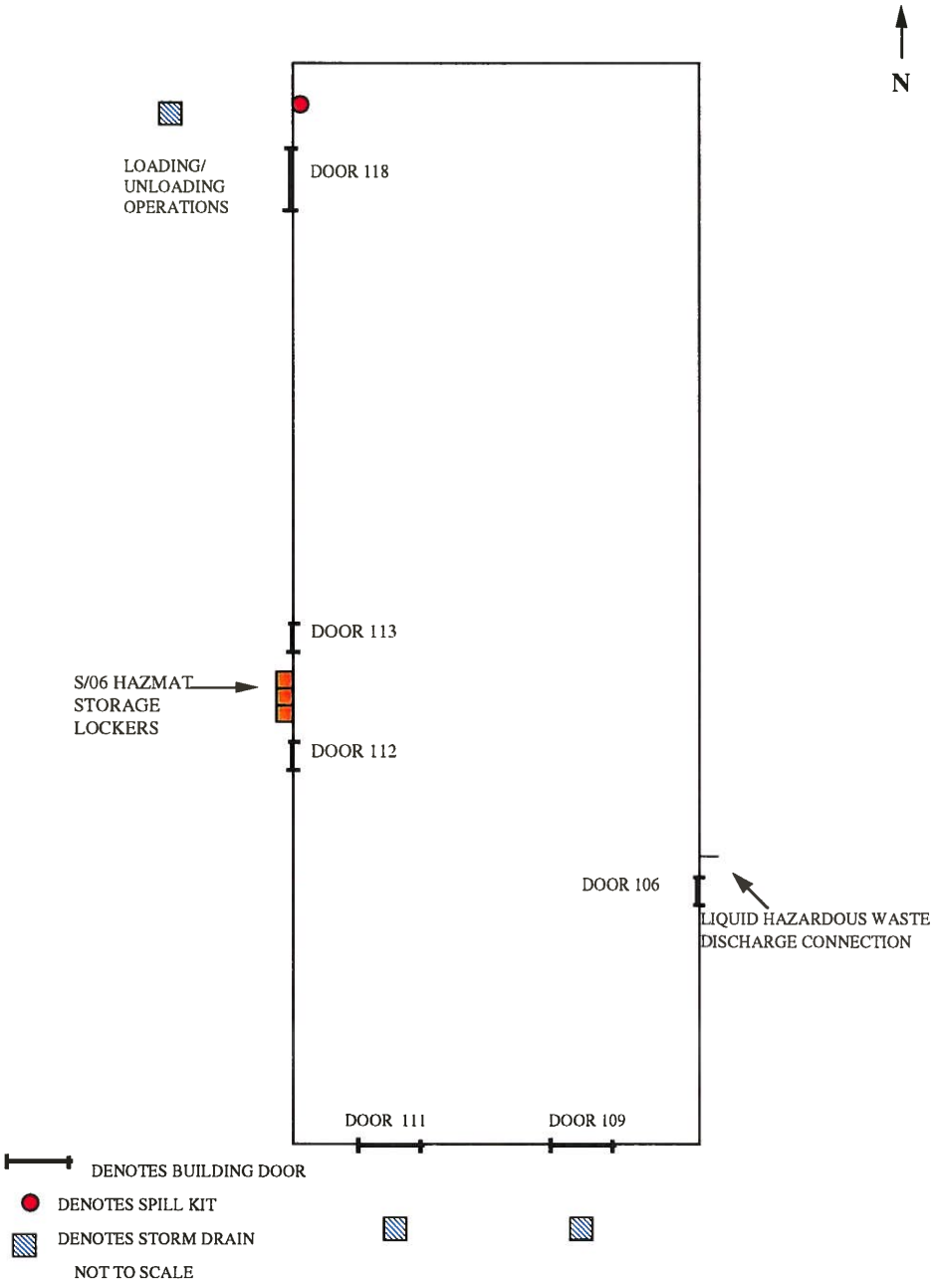
28 New drums for hazardous waste are stored outside the hazardous waste storage facility at Dry Dock 5. Covered 40 yard roll-off containers are sometimes designated as 90 day storage areas.

BUILDING 460 SHIPFITTER AND WELDER SHOP

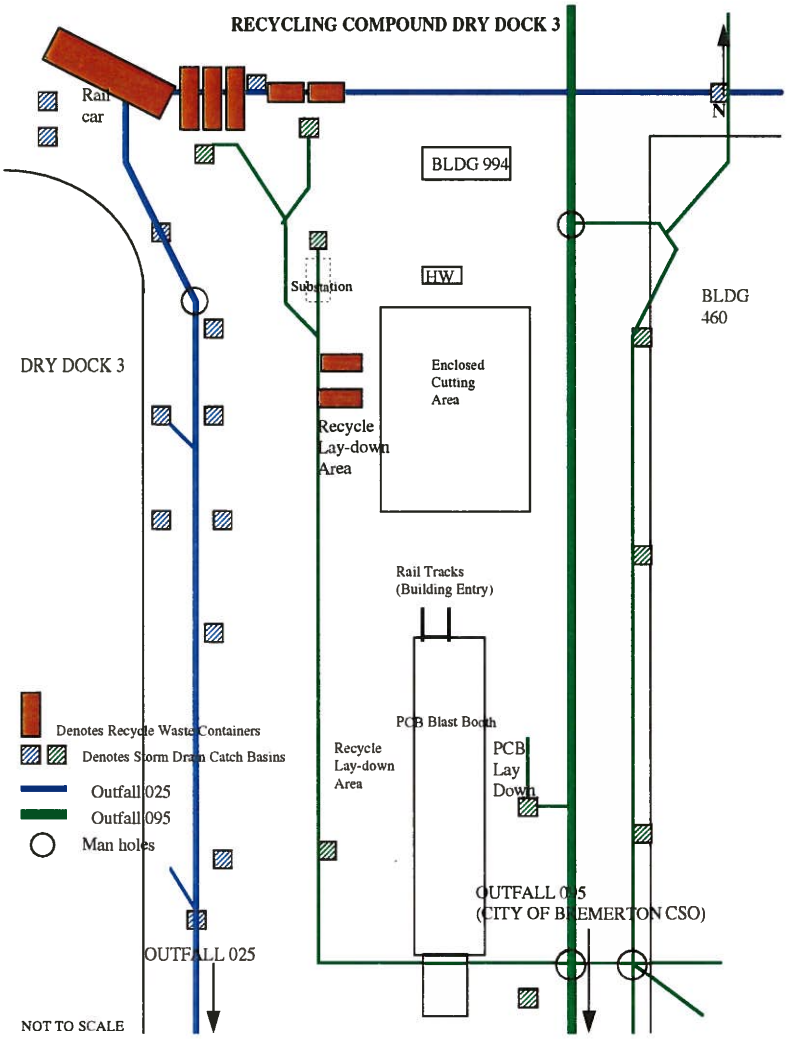


29 Metal ship parts awaiting spray processing, 55 gallon drums of sludge, and outdoor hazmat lockers are stored outside Building 460. A partially covered lay-down area outside Door 22 is used for material awaiting thermal spray processing. Within the past three years, sludge produced by cutting machines was prepared for use by the foundry in the area outside Door 22. Shop 71 materials stored at this location vary with work evolutions. These materials are listed on the Shop 71 Authorized Use List (AUL). Hazmat locker inventories are listed below. Containment #3: hand cleaner, lens cleaner, Mobil™ DTE 25 oil, Omega™ 2513A, hand cream, silicone sealant, spray gun cleaner. Door 33: Foam adhesive, 520 adhesive, insulation foam, vinyl cement, 2,2,4-trimethylpentane, kerosene, enamel paint, enamel spray paint, Mobil™ DTE 25 oil, spray gun cleaner. Locker internals are not exposed to storm water.

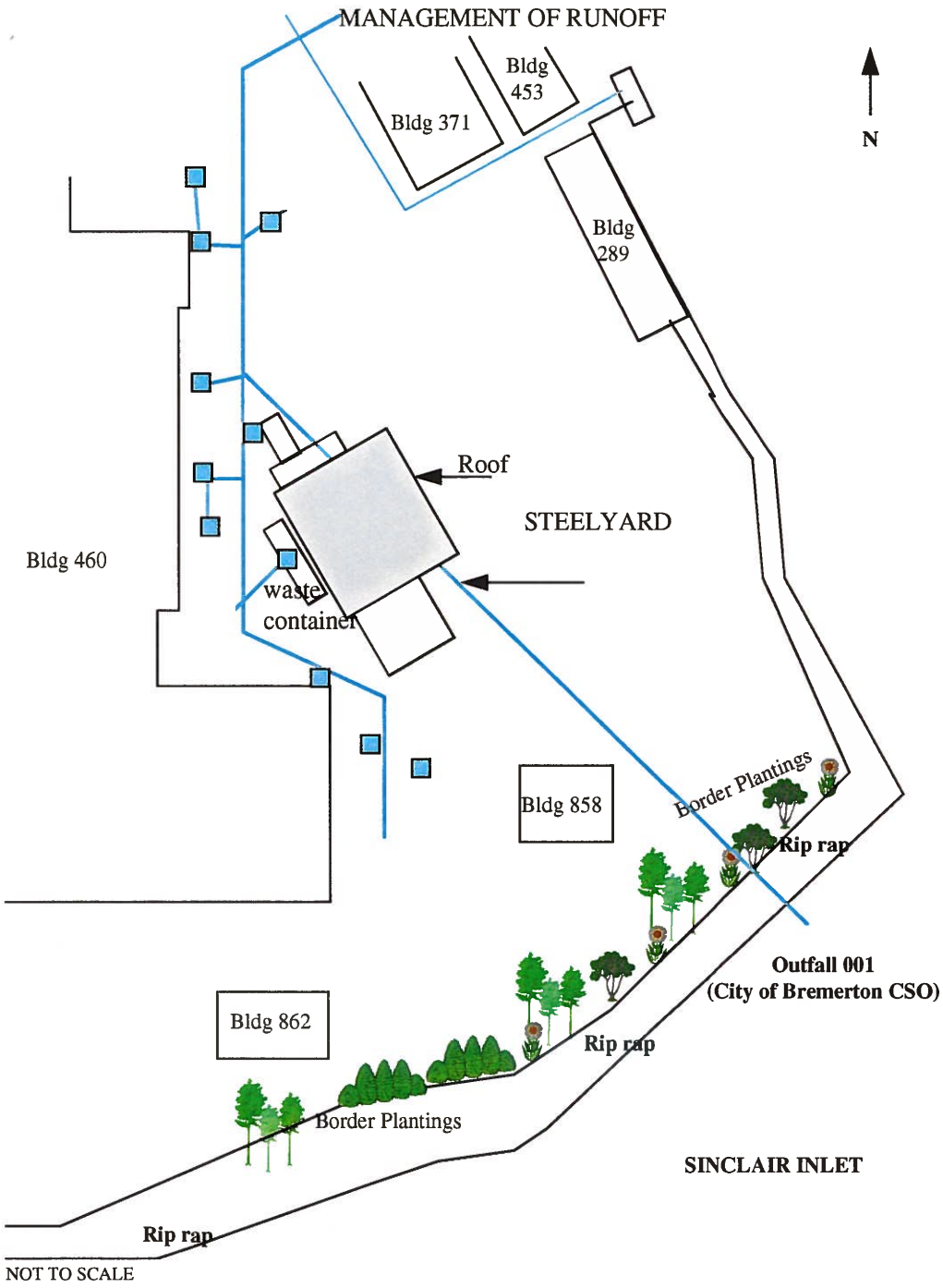
BUILDING 857 SHEETMETAL SHOP



30 Three hazmat storage lockers are located outside Building 857. The inventory list includes: Chevron Duralith EP-1 & EP-2, Moly-29, Lubriplate 630-AA, Lonocite MSP 1611, Isoflex NBU 15, 00901 Multifak EP-0, Mobil grease 28, 730 Spraygrip, MPG-2 grease, Marfak-0, Y-1, Y-2, Y-3, Y-5, Y-6, G-3 Meropa™ 460, G-4, G-5 02319 Meropa™ 68, G-6 Mobil™ fluid 350, R-4, R-5 Chevron™ Vistac 220X, R-6 Mobillube™ HD80W-90, W-4 2190 TEP, channel drive pin & bushing lubricant, Invoil™ 20, and Mobil™ SHC 624. Locker internals are not exposed to storm water.

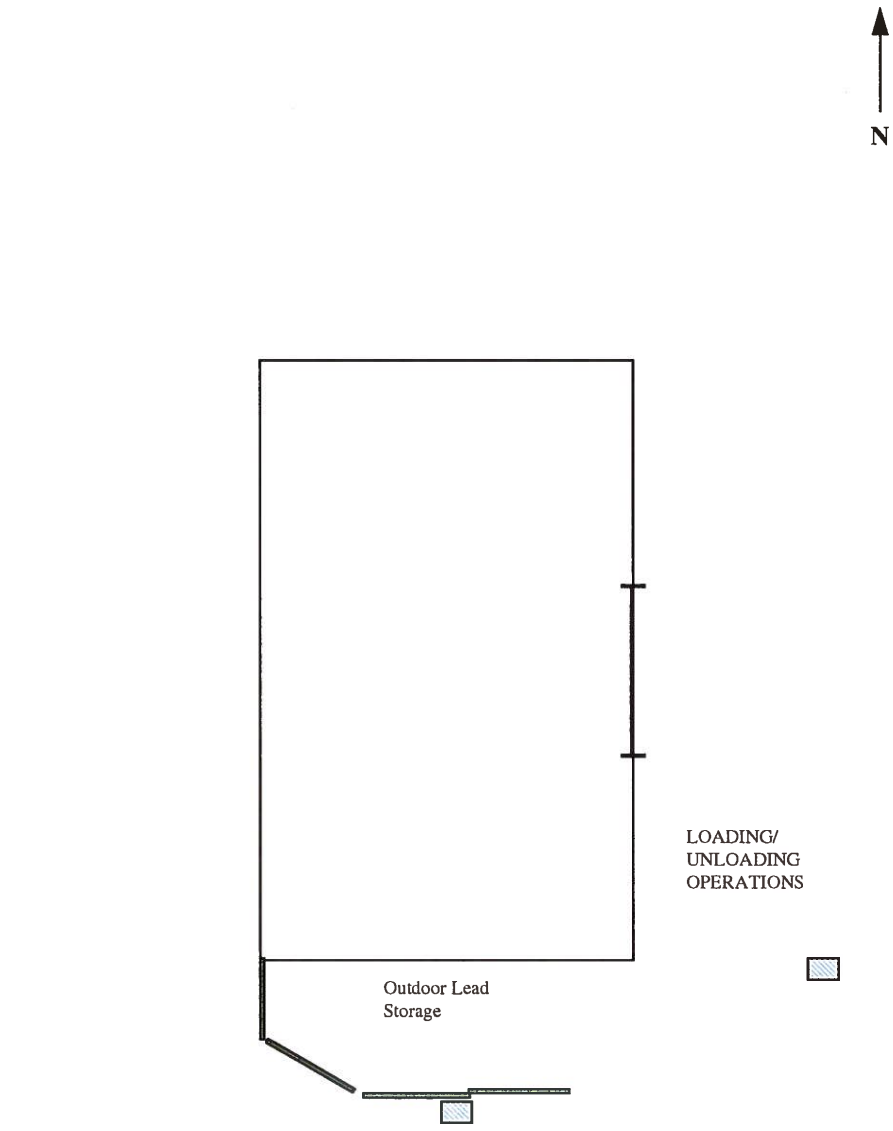


31 Cut up submarine hulls and components, cutting debris (metals), and hazardous materials lockers are exposed to storm water in outdoor areas of the Code 350 RCD facility at the northeast corner of Dry Dock 3. This area receives heavy use for submarine recycling operations. Cutting operations have recently (June 1997) been covered. Storm water was exposed to cutting debris (metals) in the past. Hazmat locker inventories are listed below. NE Dry Dock 3 demil: ATF, 2-cycle oil, foam adhesive, grease, deck coating, N-hexane, spray paint, kerosene, lens cleaner, Mobil™ DTE 25 oil, hydraulic fluid. Dry Dock 3 east side: Lubricant, Chevron™ GST oil 46, tapping compound, vinyl cement, spray paint, spray varnish, Neolube™, silicone sealant, contact adhesive, WD-40™. Shop 64 demil: Foam adhesive, 2,2,4-trimethypentane, enamel spray paint, paint remover, tapping fluid, water displacing compound. Small blast tent: Foam adhesive, 50A CP Chil Seal™, silicone elastomer, heat resistant sealant, vinyl cement, dishwashing liquid, hand cleaner, Kroil™, enamel spray paint, lens cleaner, Mobil™ DTE 25, penetrating oil, hardener, epoxy resin, adhesive, Super Lube™.



32 Raw material staging and storage at the steel yard is operated by Code 500. The steelyard is a thoroughfare and is used as a transportation route. One rail crane operates in the area to load and unload trucks and railcars. Outdoor storage of steel plate and a 40 cu. yd. solid waste dumpster are located in the steelyard. There is a covered recycling facility in this area. Primary contaminates from recycling operations are copper, lead and zinc.

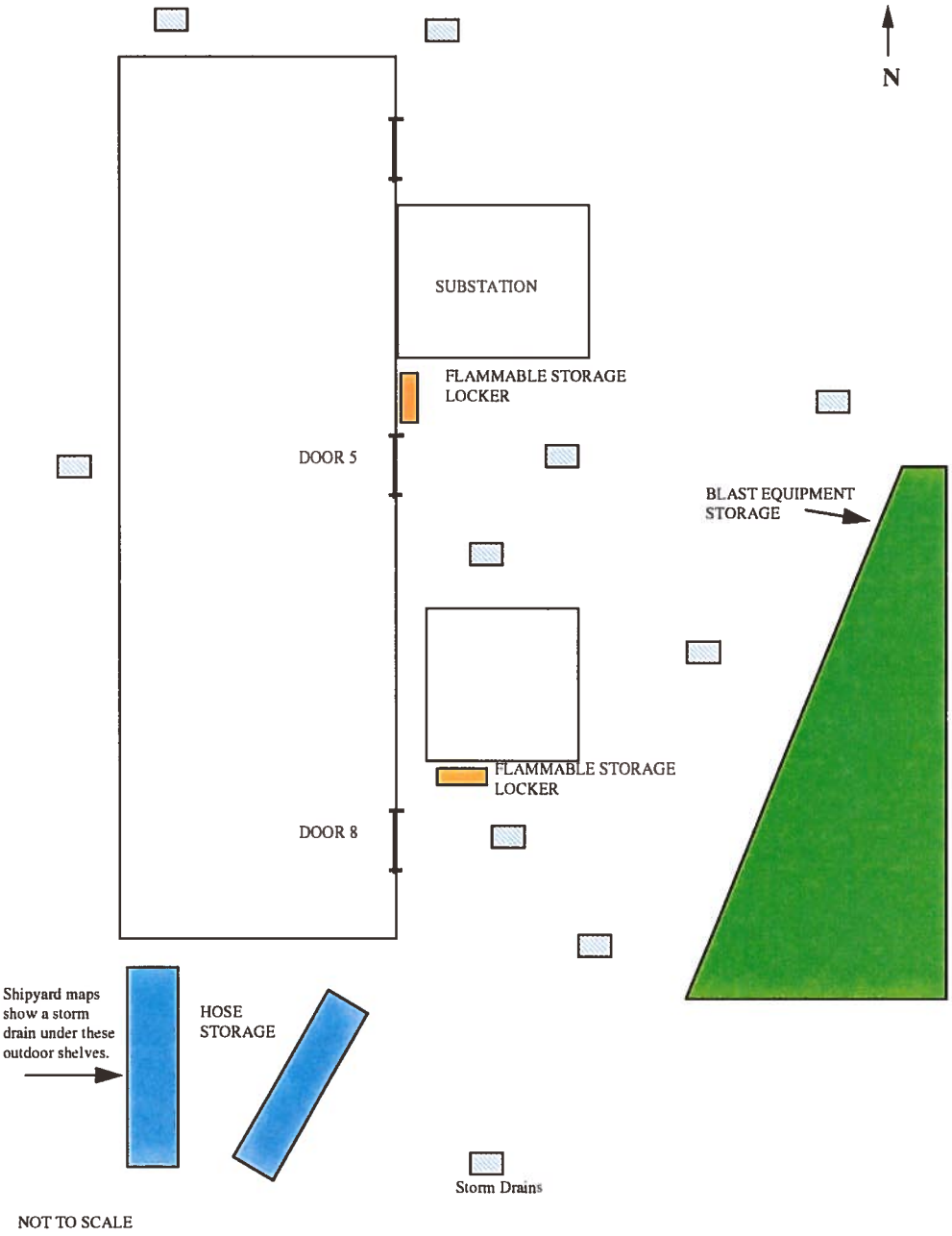
BUILDING 972 LEAD STORAGE



NOT TO SCALE

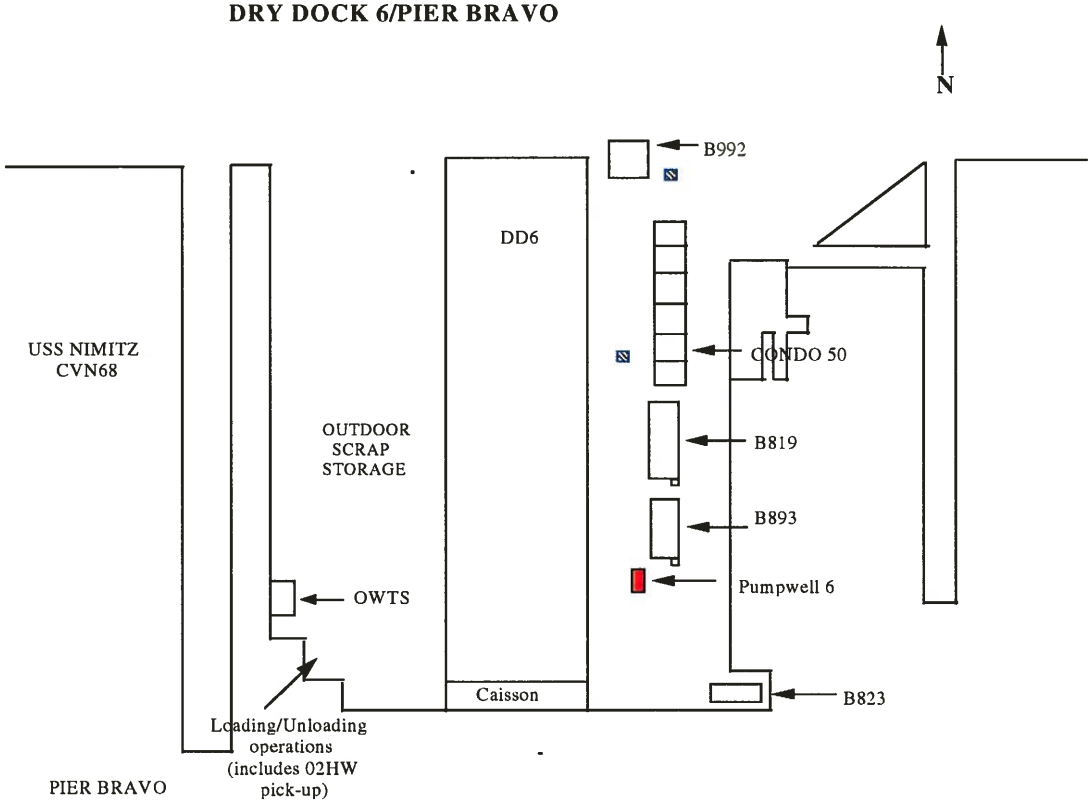
33 Boxes of used lead are staged on material racks at Building 972. These boxes are covered with tarps and Herculite™.

BUILDING 480 PRODUCTION SHOPS



34 Pressure vessels, vacuum recovery units, and dedusters (bag houses) are stored in an outside area to the east of Building 480. Equipment utilized for the removal of PCBs or asbestos are emptied, have inlets and outlets capped or plugged, must be properly labeled, for storage in this location. Pressure vessels, which are empty but not cleaned, have contained clean copper slag, while dedusters and vacuum recovery units may be contaminated with paint dusts containing heavy metals.

DRY DOCK 6/PIER BRAVO



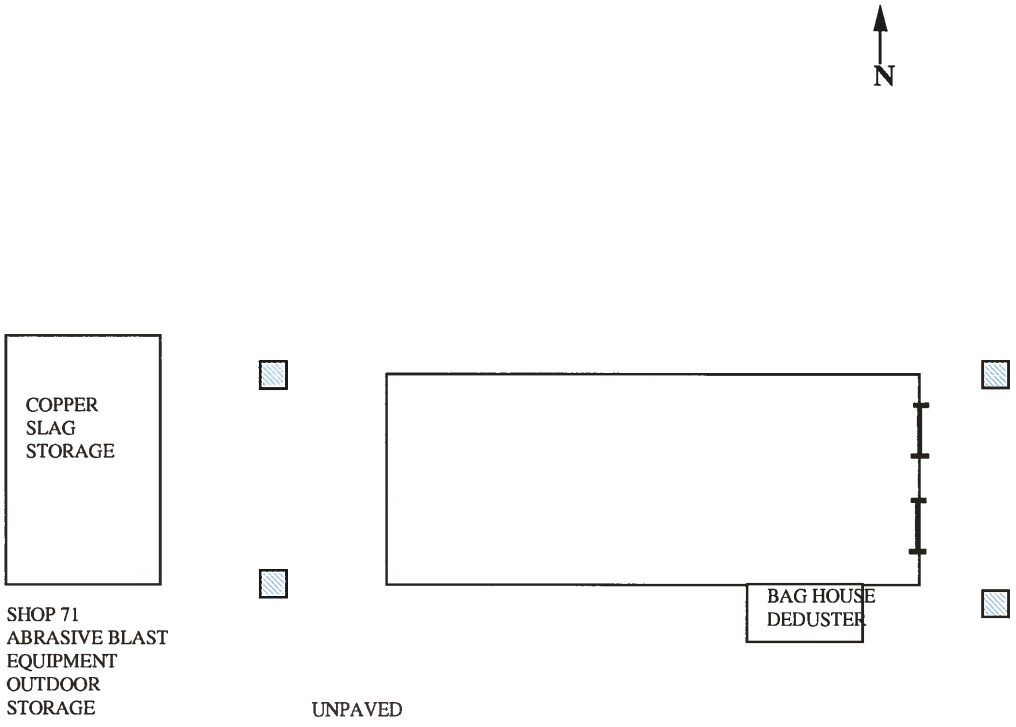
DENOTES STORM DRAINS

DENOTES BUILDING DOORS

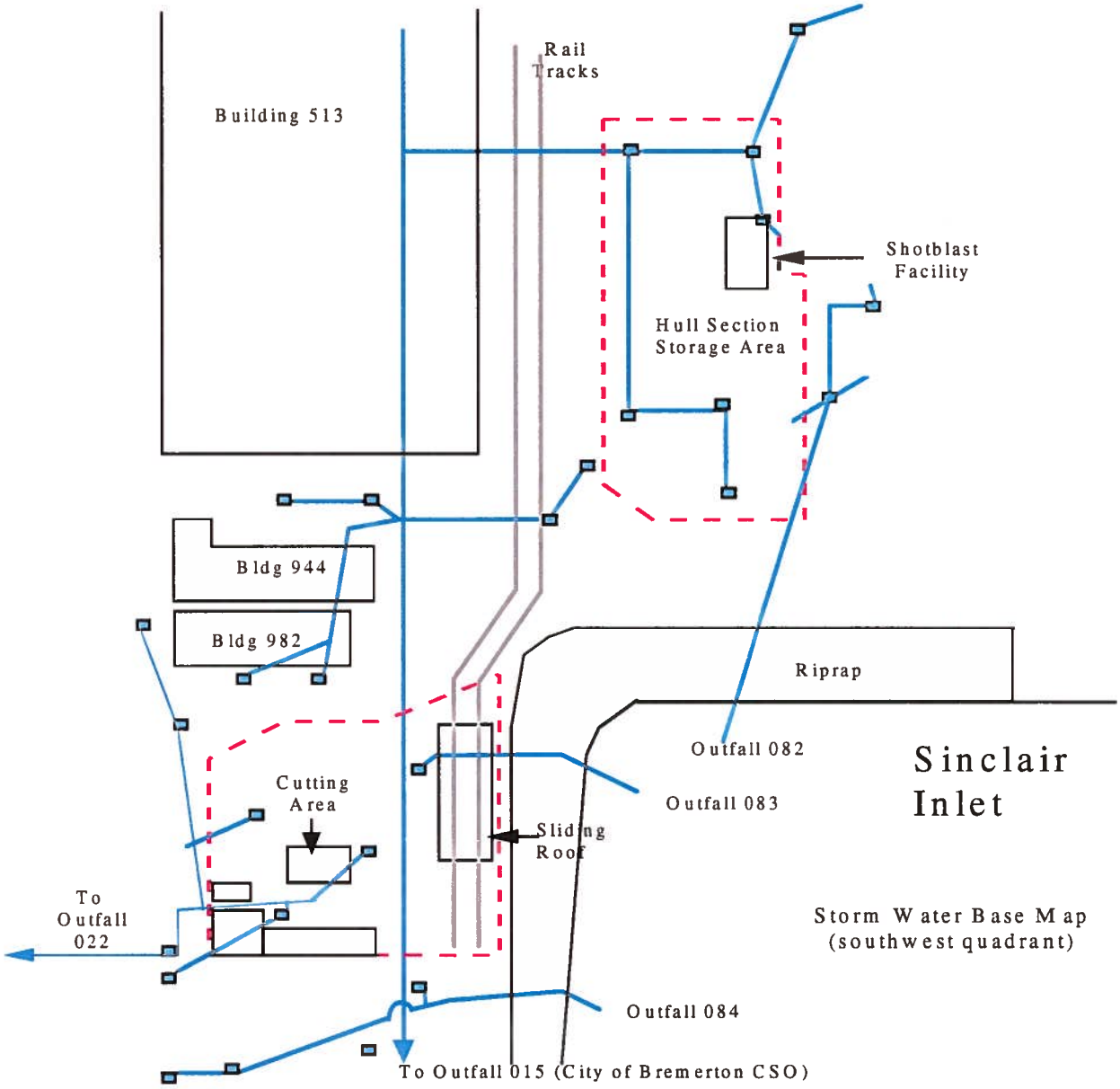
NOT TO SCALE

35 NFPA rated flammable material storage building and a white hazmat locker are on Pier Bravo. A solvent tank and various equipment at Condo 50 belong to Shop 38. Materials in the Shop 71 storage building vary with work evolutions. The 30 gallon solvent tank is in a cofferdam (secondary containment). The tank contains Safety Kleen™ 140 Solvent-MS. When not in use for parts cleaning, the tank is covered with a Herculite™ tarp. Solvent is delivered by the vendor, who also removes the used solvent for recycle. An oily water treatment system (OWTS) is located at the southwest side of Dry Dock 6. Oily bilge water is transferred in hoses which are tested annually. Hose connections are bagged with plastic.

BUILDING 862 GRIT BLAST AND PAINT SPRAY FACILITY

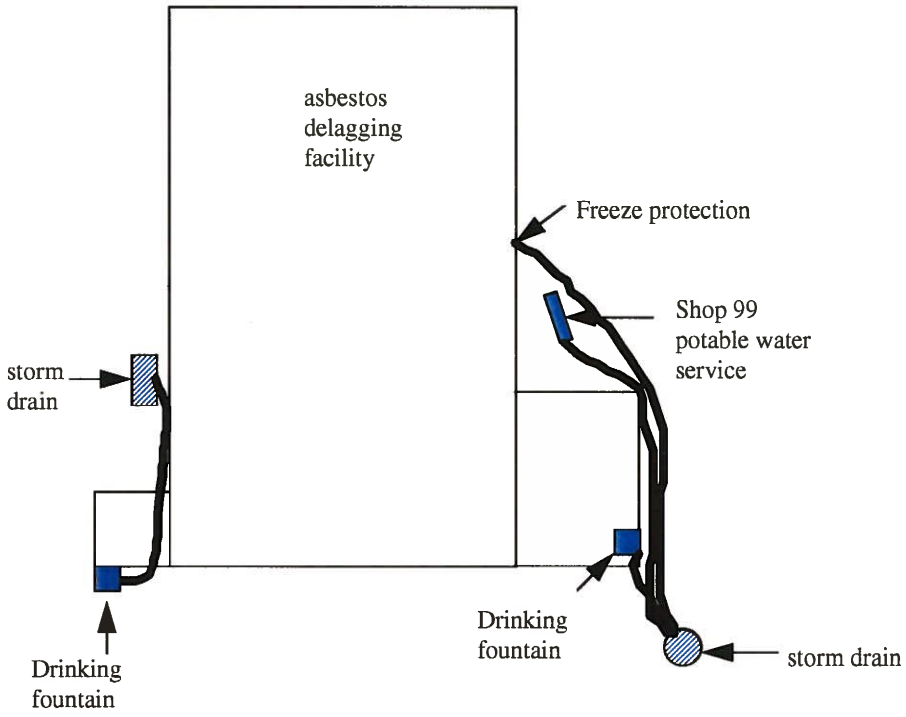


36 Abrasive blast equipment, such as sand hoppers are stored on the south side of Building 862. Dedusters and vacuum recovery units may also be stored at this location Blast equipment is required to be emptied at the work site prior to storage at this location.

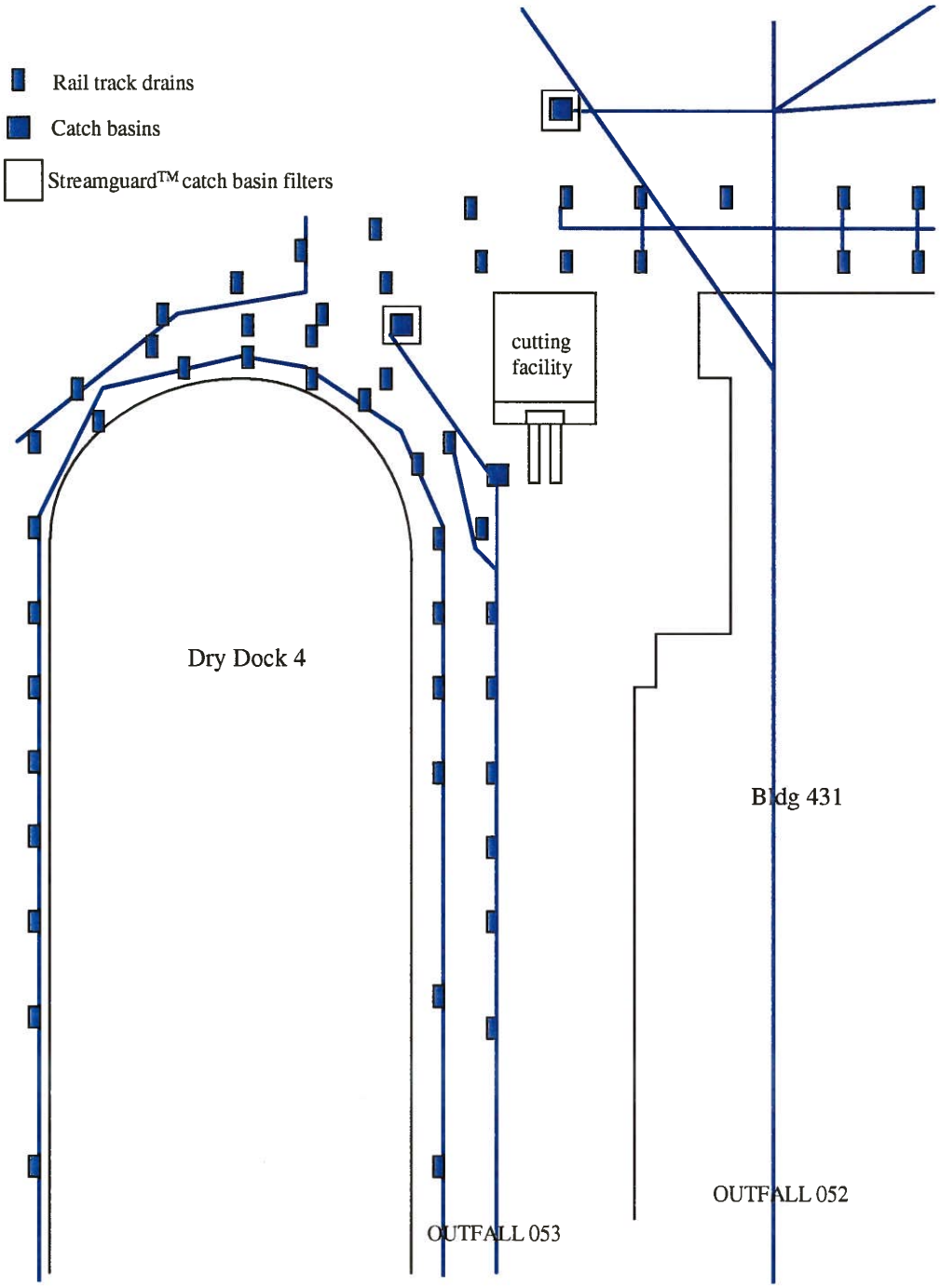


38 Recycling scrap, cutting debris (metals), and hazmat lockers are exposed to storm water at this location, the 513 recycle compound. This is a heavily used area for submarine recycling operations. The rail car is partially covered. Stormguard™ catch basin filters have been installed in the compound. Hazmat locker inventories include: adhesives, all purpose cleaner, belt dressing, ethene, aerosol silicone lubricant, argon, layout dye, Certane™ 2075 Raincoat, ATF, contact cement, gasket remover, insulation foam, unleaded gasoline, vinyl cement, PCB cleaner, water preservative, 2,2,4-triethylpentane, isopropyl alcohol, enamel spray paint, fluorinated grease, cleaner/degreaser, MAPP gas, plastic pipe cement, penetrating oil, hardener, epoxy resin, silicone rubber sealant, mastic remover, starting fluid, 2-cycle engine oil, penetrating lubricant, and cutting oil. Locker contents are not exposed to stormwater.

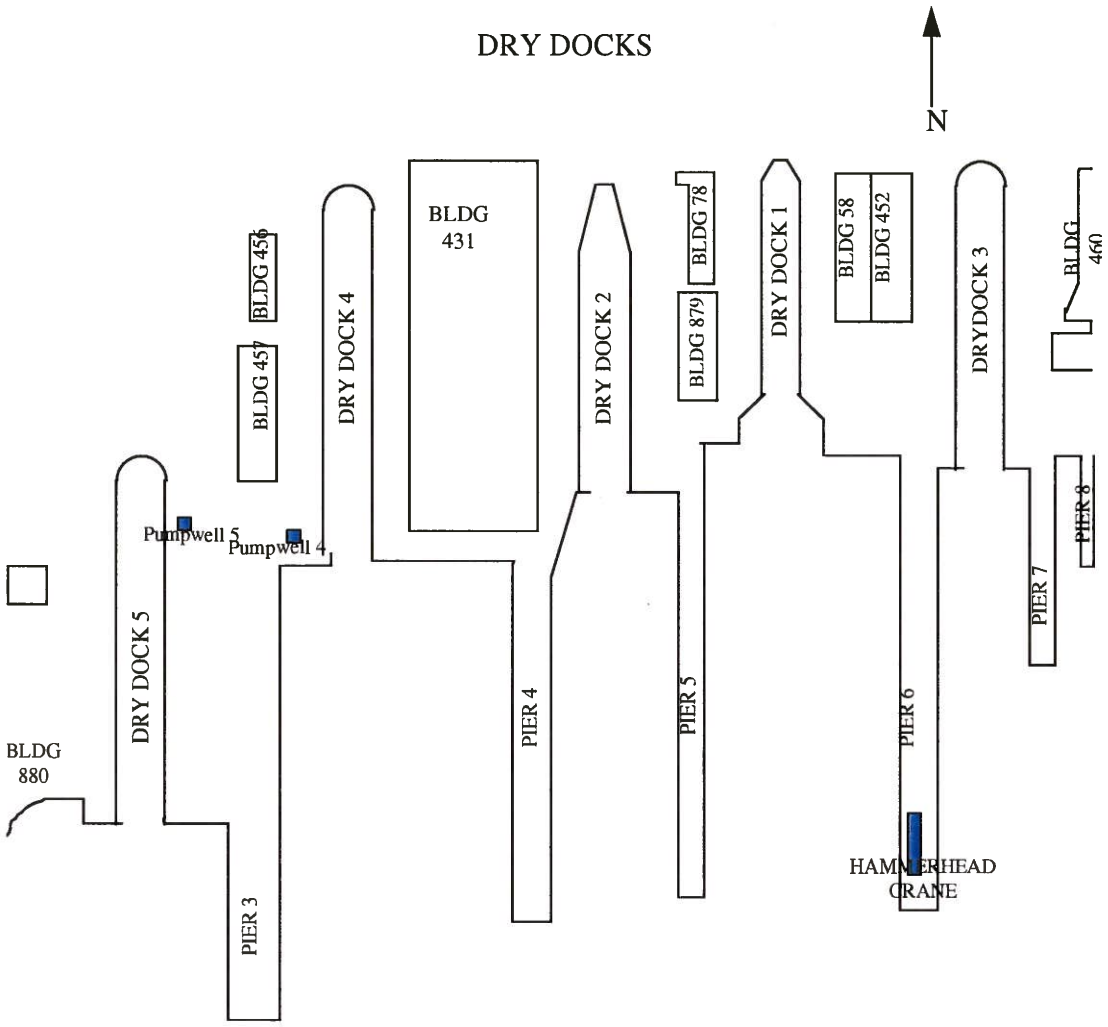
DRY DOCK 3 DELAG FACILITY



39 One hazmat locker is located outside the Dry Dock 3 delagging facility. Locker inventory includes: foam adhesive, all purpose cleaner, 520 adhesive, protective coating, lens cleaner, multi-purpose sealant, dishwashing liquid, hand cleaner, and bleach. Locker internals are not exposed to storm water.



40 A hazmat locker located outside the Dry Dock 4 reactor compartment disposal (RCD). Locker inventory includes: spray paint, isopropyl alcohol, Neolube™, pipe cement, primer/cleaner, foam adhesive, lubricant, adhesive sealant, general purpose detergent, gasket remover, dishwashing liquid, hand cleaner, Tube Lube™, and lens cleaner. Locker contents are not exposed to storm water.



NOT TO SCALE

41 Hazmat lockers at outdoor locations within the Controlled Industrial Area of the Shipyard are exposed to storm water but internals are not. Inventories of individual locations are listed below:

Code 350 inventory: At sample trailer 57: Foam adhesive, general purpose detergent, PCB cleaner, hand cleaner, lens cleaner. At Building 456: Floor tile adhesive, chlorine bleach. Dry Dock 1 flam locker: 1,1,1-trichloroethane, rubber and vinyl adhesive, foam adhesive, all purpose cleaner, 50A CP Chil Seal™ , multi-purpose sealant, insulation foam, vinyl cement, PCB cleaner, 2,2,4-trimethylpentane, isopropyl alcohol, kerosene, hand cleaner, enamel spray paint, paint remover. Dry Dock 5, east: Foam adhesive, penetrating oil, silicone lubricant, tapping compound, fire resistive mastic, vinyl cement, isopropyl alcohol, Kroil™, enamel spray paint, Molylube™ spray, nickel anti-seize lubricating paste, penetrating lubricant, alkyd enamel paint, cutting oil. Dry Dock 5, northwest: Foam adhesive, rust remover, acetone, chain saw oil, disinfectant detergent, enamel spray paint, penetrating oil, WD-40™. Dry Dock 5 saw shack: 1,1,1-trichloroethane, foam adhesive, all purpose cleaner, 520 adhesive, Chevron™ thinner 325, contact cement, benzol peroxide, glazing compound, general purpose detergent, multi-purpose sealant, acrylic latex emulsion, fire retardant weather barrier, vinyl cement, kerosene, 2-cycle lube oil, Molylube™ spray #7020, anti-seize lubricating paste, hardener, hand cream, hand cleaner, trichloroethane, Tube Lube™. Dry Dock 1 RCD: Rubber and vinyl adhesive, Chevron™ GST oil 46, vinyl cement, enamel spray paint, Herculite™

CVV, reagent 4 sodium hydroxide, reagent K sodium sulfide, anaerobic sealant, cutting oil, lens cleaner, WD-40™. Dry Dock 5 RCD: Rubber and vinyl adhesive, vinyl cement, spray paint, Kroil™, spray varnish, adhesive, Neolube™.

Northwest Dry dock 5, Shop 57: Foam adhesive, 50A CP Chil Seal™, lens cleaner, cable preparation kit, hand cleaner.

Southwest Dry Dock 4, Shop 64: Hydraulic oil, foam adhesive, vinyl cement, PCB cleaner, kerosene, enamel spray paint, penetrating oil, paint stripper. South end Building 78: Spray paints. Southwest Building 456: Spray paints. Southwest Dry Dock 3 locker #6: Spray paints. West side dry dock 3 locker #5: 2,2,4-trimethylpentane, lead-free gasoline, PCB cleaner, kerosene, NO. 313-4, FX153.

Dry Dock 3 Shop 57: Foam adhesive, 520 adhesive, 50A CP Chil Seal™, Fibrseal™, hand cleaner, Mobil™ DTE 25 oil. Northwest Dry Dock 3, locker #1: Foam adhesive, Certane™ 2075 Raincoat, PCB cleaner, 2,2,4-trimethylpentane, kerosene, Kroil™, WD-40™."

One hazmat locker at Pier 5, south of Building 554 belonging to Shop 90. Locker contents are listed on the Shop 90 AUL.

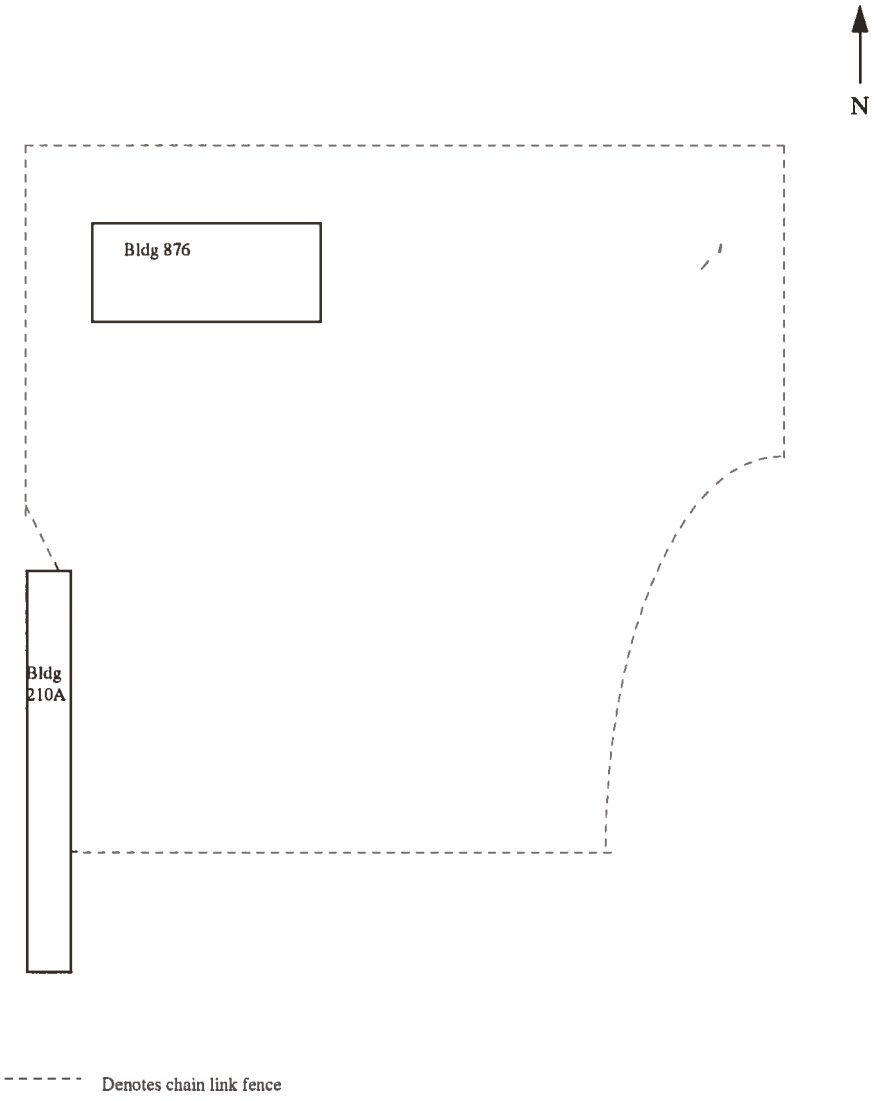
One hazmat locker at Dry dock 1, east side belonging to shop 72. Locker contents are listed on the Shop 72 AUL.

Hazmat lockers at Dry dock 4, southwest side and at Building 879, southeast end belonging to Shop 38. Contents of these lockers are listed on the Shop 38 AUL.

Submarine hull, bulkhead, and structural sections removed from dry docks during the dismantling process at Dry docks 1 through 6 during RCD operations by Code 350. Debris from cutting operations in the dry dock is deposited in lay-down areas while materials are awaiting transport. Debris contains metals and paint residues.

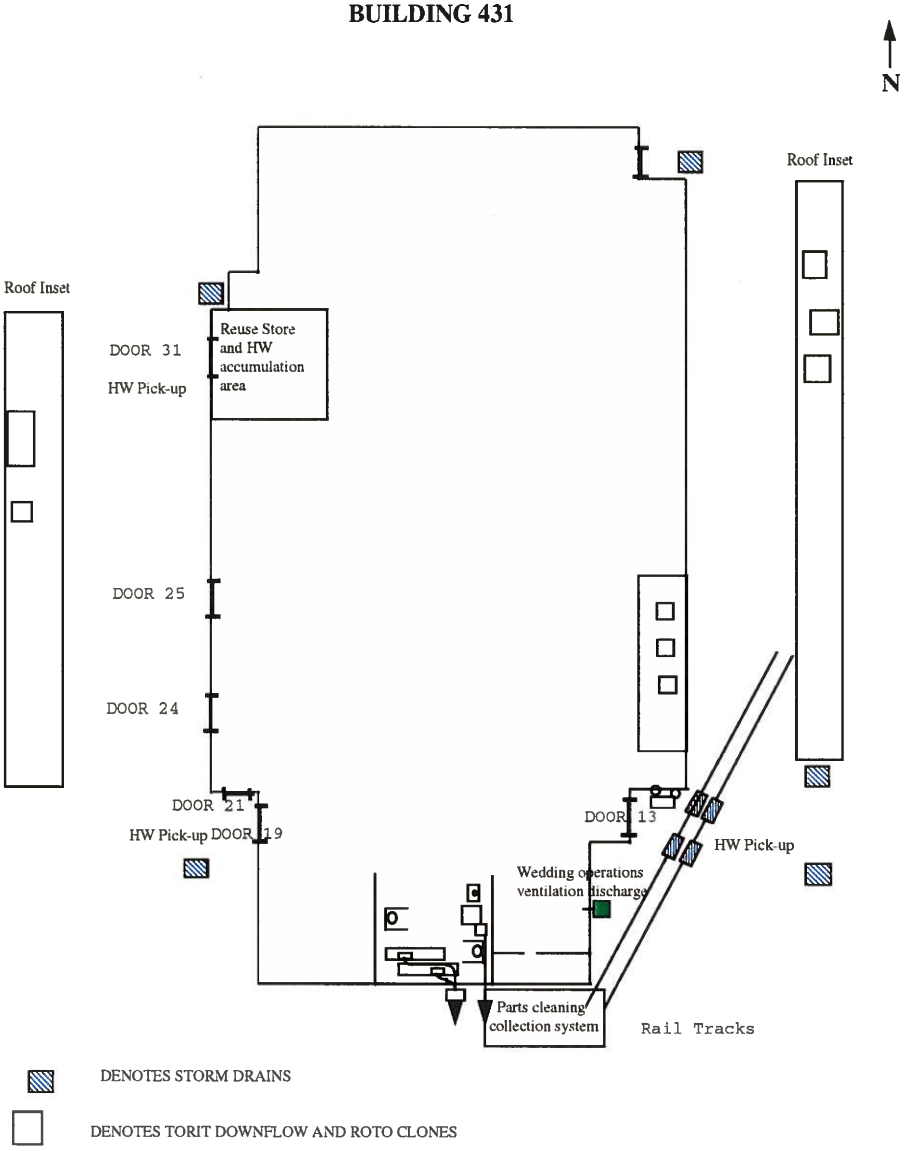
Three hazmat lockers at Pier 5, north end belong to Codes 340 and 303. Contents of these hazmat lockers are listed on Codes 340 and 303 AULs.

Scrap Yard



42 Recycle metals collection area, south of Building 876. This is a collection point for hull and scrap metals from submarine recycle operations. The potential pollutants from these activities are copper, lead, and zinc. This is former installation restoration (IR) Site 12. It is now underlain with an asphalt liner.

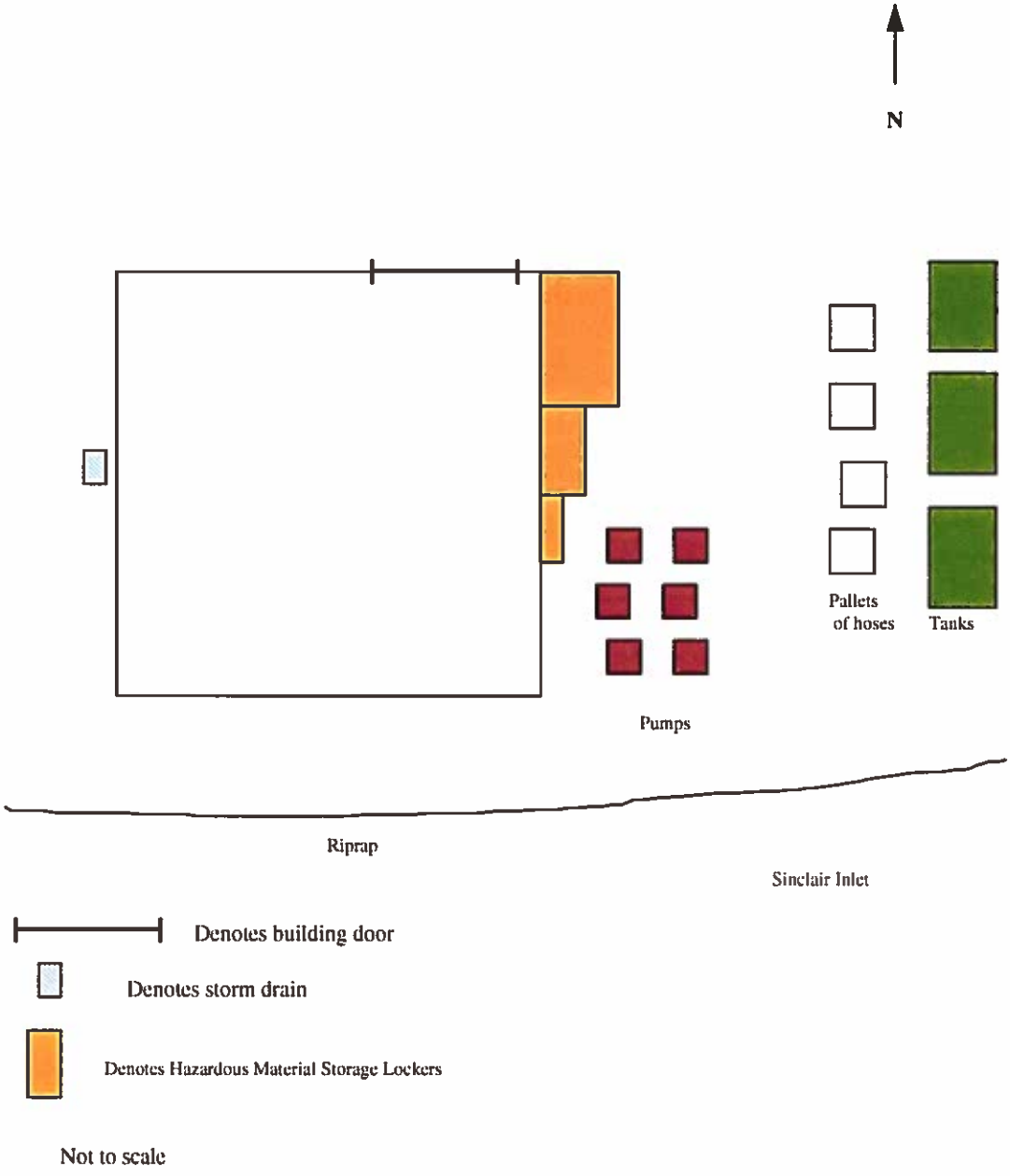
BUILDING 431



NOT TO SCALE

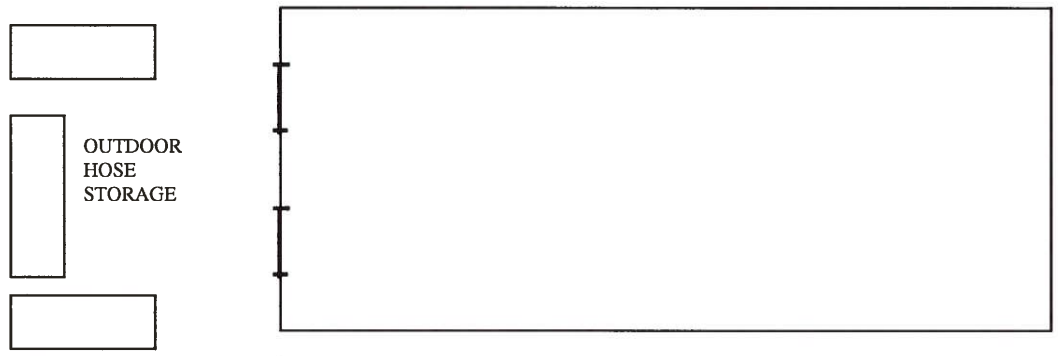
43 Three hazmat lockers are located on the west side of Building 431, outside Door 29 of Toolroom 4. Locker contents are not exposed to storm water. Shop 06 hazmat locker Inventory list includes 706 Rustsolvo™, spray lubricant, Kroil™, WD-40™, Moly Lube™ #7029, Dykem™ layout red DX 296, two cycle lube oil, saw gas mix 50-1 oil, oil for saw gas, oil W-2190 TEP, Parker™ O Lube, Bardahl™ extra pure grease, Citrus Plus™, LPS Super Cleaner™, and Krylon™ spray paint. A potential detergent discharge is located at the south end of the building. A vapor collector draws mist from aqueous parts washer operations inside the building. The discharge is routed through a series of baffles and condensate is routed back to the parts washer reservoir. Failure of the mist collection system could release detergents outside the building. Locker internals are not exposed to storm water.

BUILDING 872 STEAM CLEANING



44 Portable tanks are cleaned and inspected at Building 872. Pumps are repaired at this facility as well as steam cleaning of greasy items for various shops and codes. Hose repair, testing, and certification are also accomplished inside this building. Pumps, hoses, and fittings are stored outside exposed to storm water.

BUILDING 875 HOSE CLEANING AND TEST FACILITY



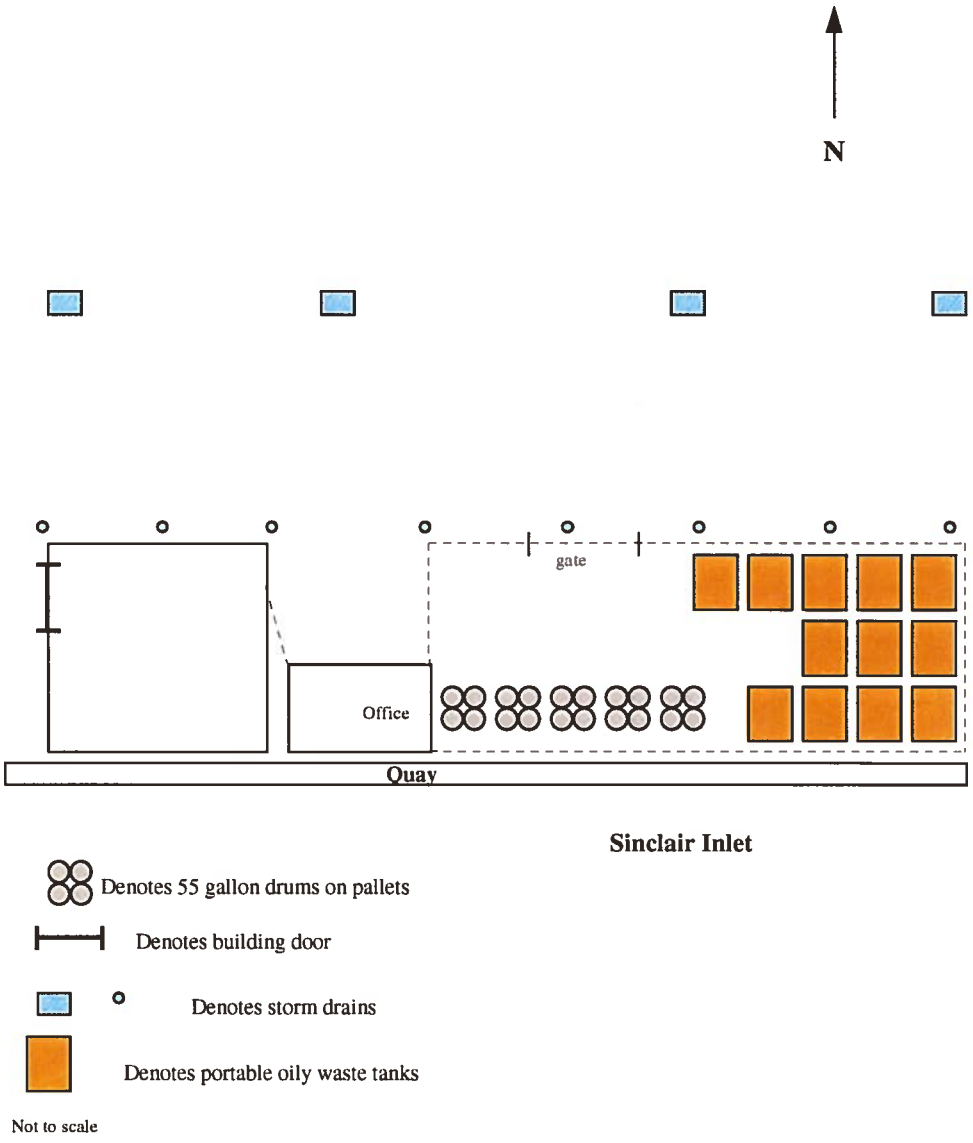
DENOTES STORM DRAIN

DENOTES BUILDING DOOR

NOT TO SCALE

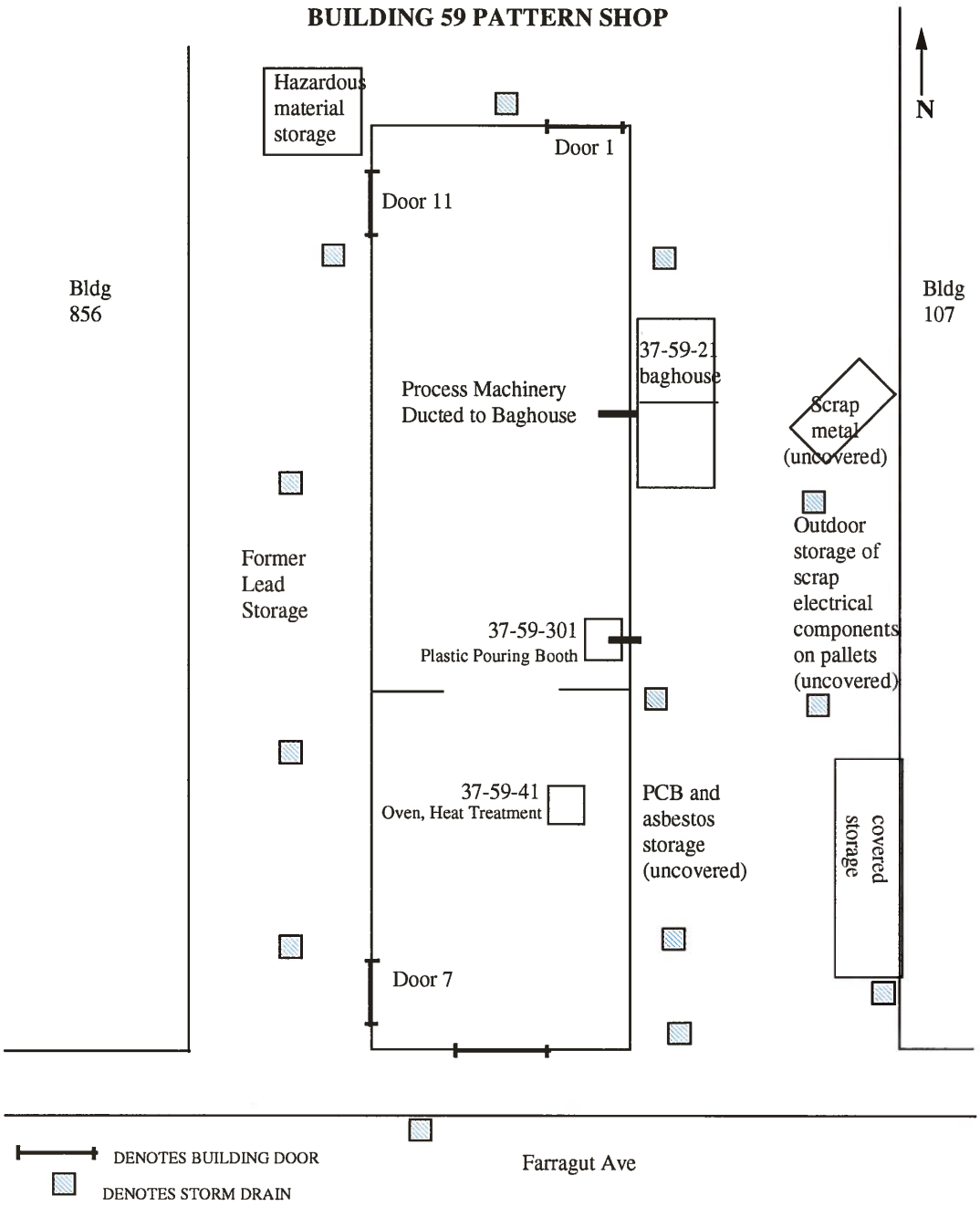
45 Sewage hoses are exposed to storm water outside Building 875, Hose Cleaning and Test Facility. Watertight caps are installed on the ends of the sewage hoses which are stored on outdoor shelves outside of this building.

OILY WASTE PROCESSING



46 Portable oily waste collection tanks and 55 gallon drums of oily waste are collected at the oily waste processing facility. Palleted drums and waste collection tanks are stored inside a fenced area along the quay behind building 431. Potential to impact storm water is low.

BUILDING 59 PATTERN SHOP

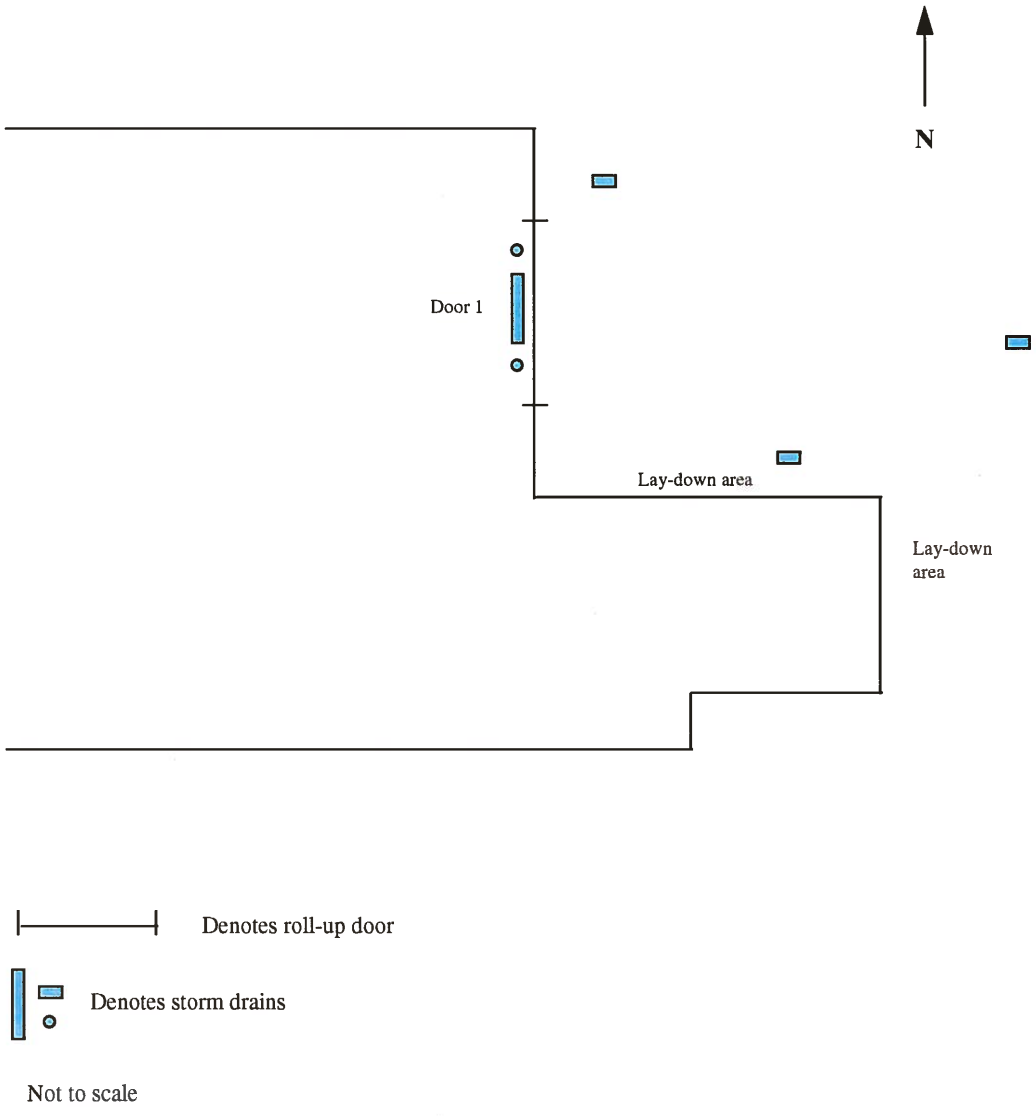


Note: building 59 has copper gutters and downspouts

NOT TO SCALE

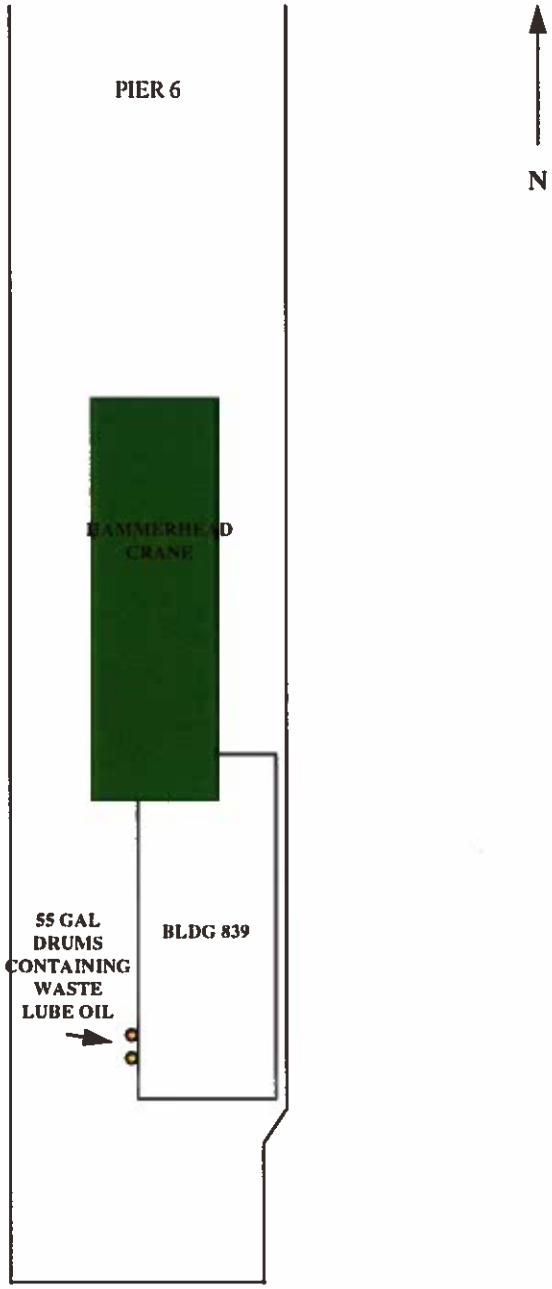
47 Covered lead has been stored on pallets on the west side of Building 59 until recently. Components containing PCBs and asbestos are stored in lined boxes and on pallets on the east side of this building. The sections of these components containing pollutants are wrapped with Herculite™. A covered storage area and an uncovered area (for scrap electrical components) are on the west side of Building 107.
Scrap components are destined to Shops and Codes in Building 107 for dismantling and waste designation.

Building 469 Propeller Shop



48 Reactor compartment disposal (RCD) rollers stored outside Building 469 are exposed to storm water during non-winter months. RCD rollers are overhauled at this building. Lay-down areas are located on the west end of the building and outside door 1. Potential leaks of petroleum products are a source of pollutants. This equipment, which is stored on pallets, is tarped during the winter months.

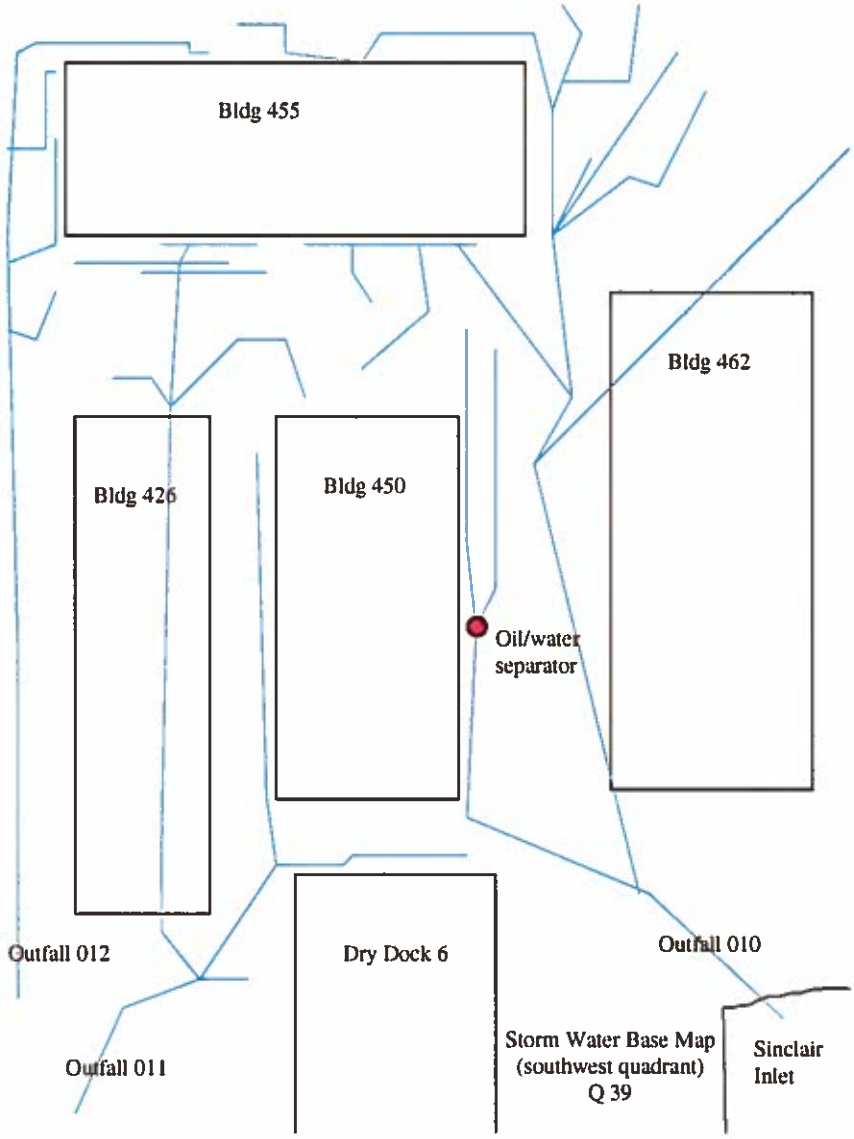
PIER 6 AND BUILDING 839

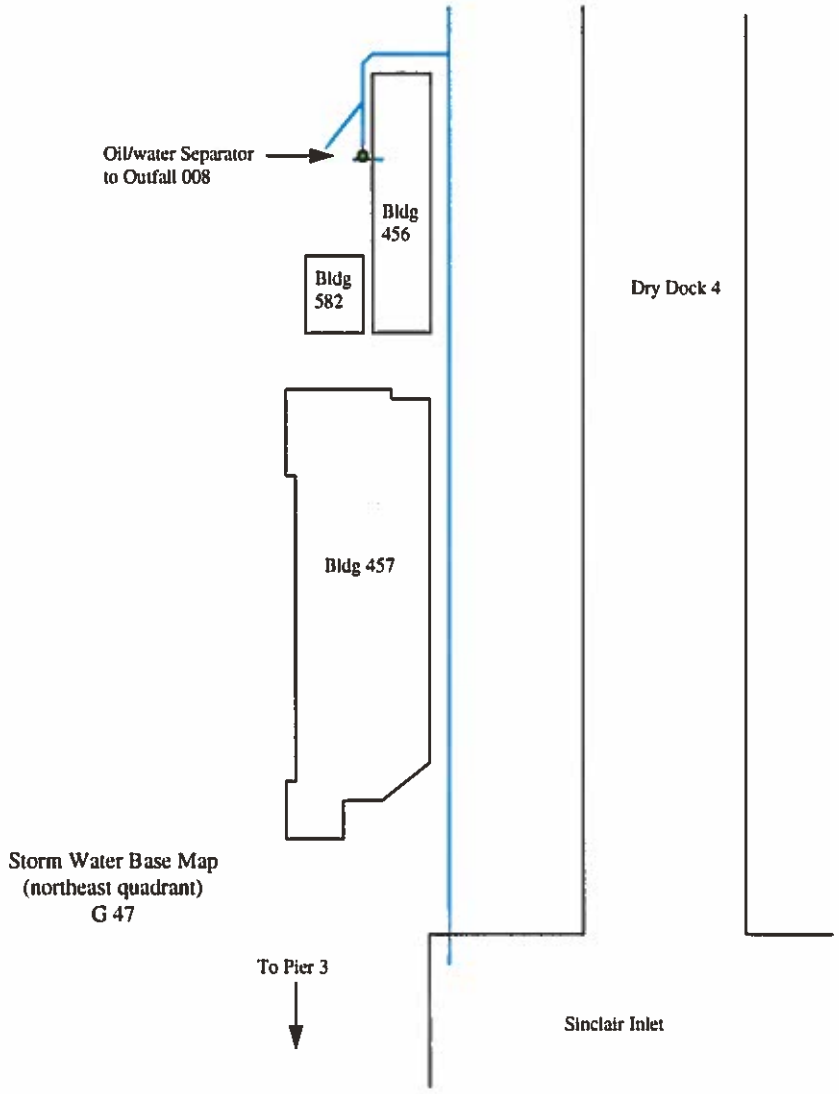


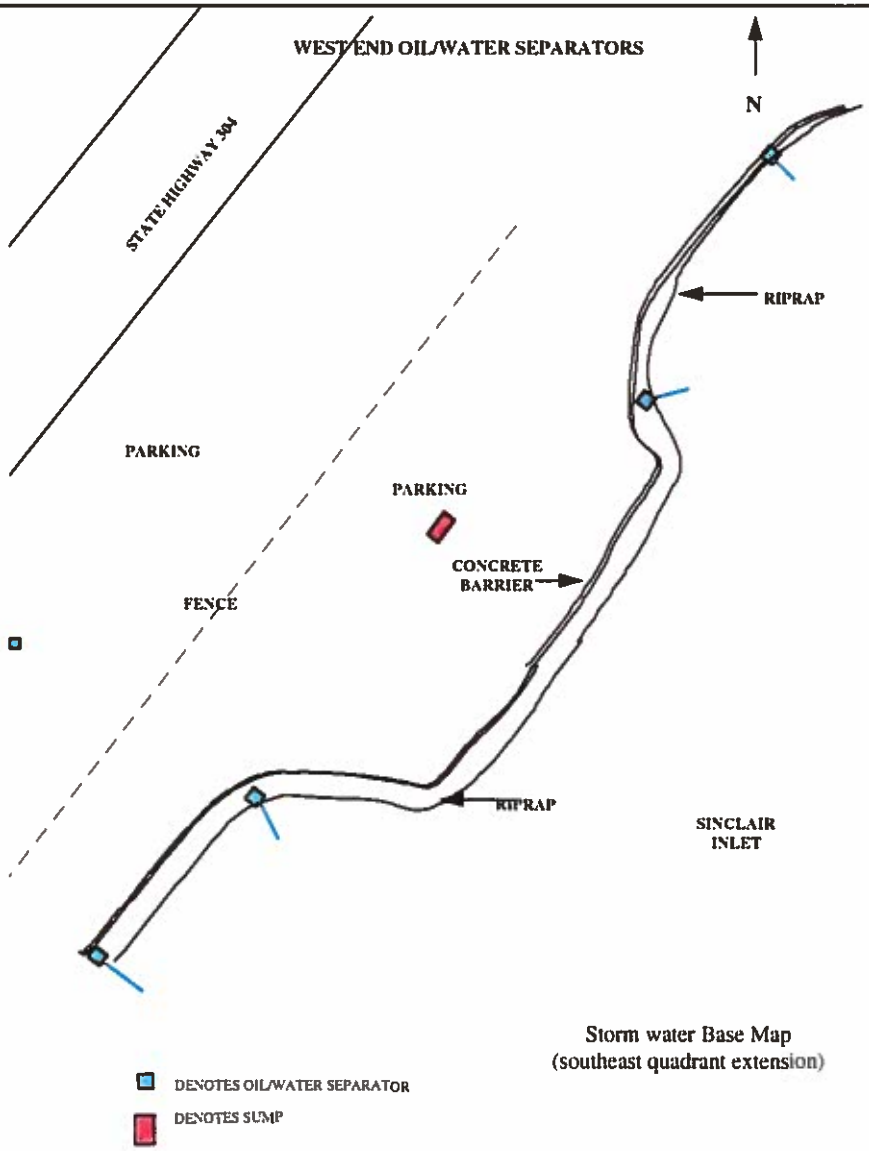
NOT TO SCALE

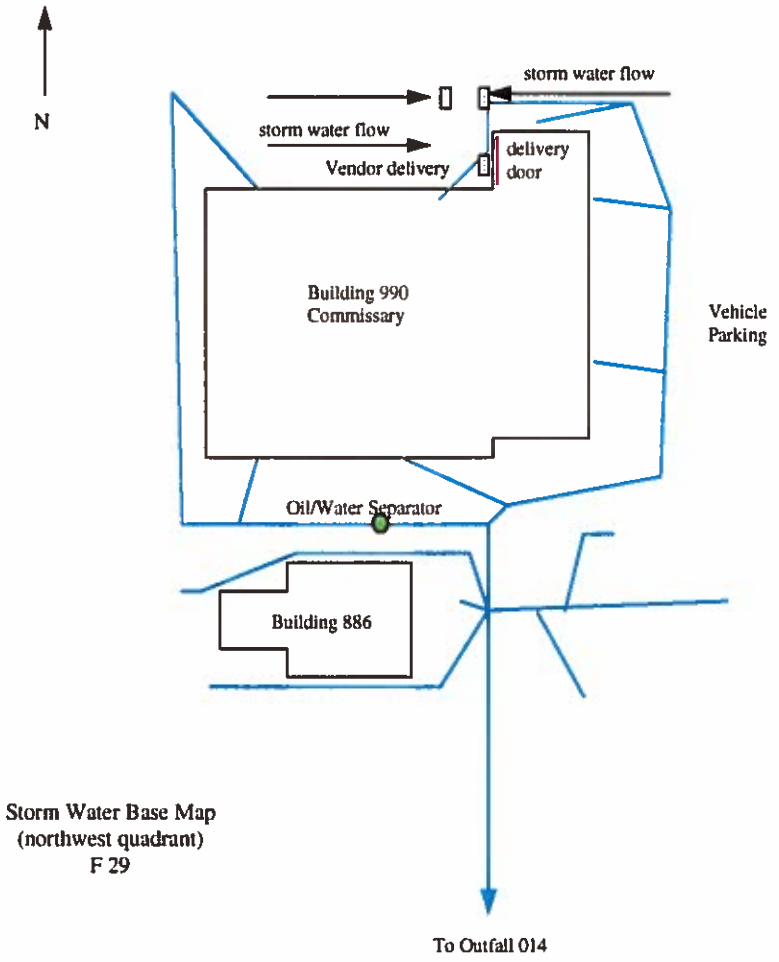
49 Two 55 gallon drums containing floor dry and small amounts of lube oil are located on the west side of Building 839. A hose is routed from a compressor inside Building 839 to two drums outside the building. Drum covers are installed. The drums were installed as storm water pollution prevention measures.

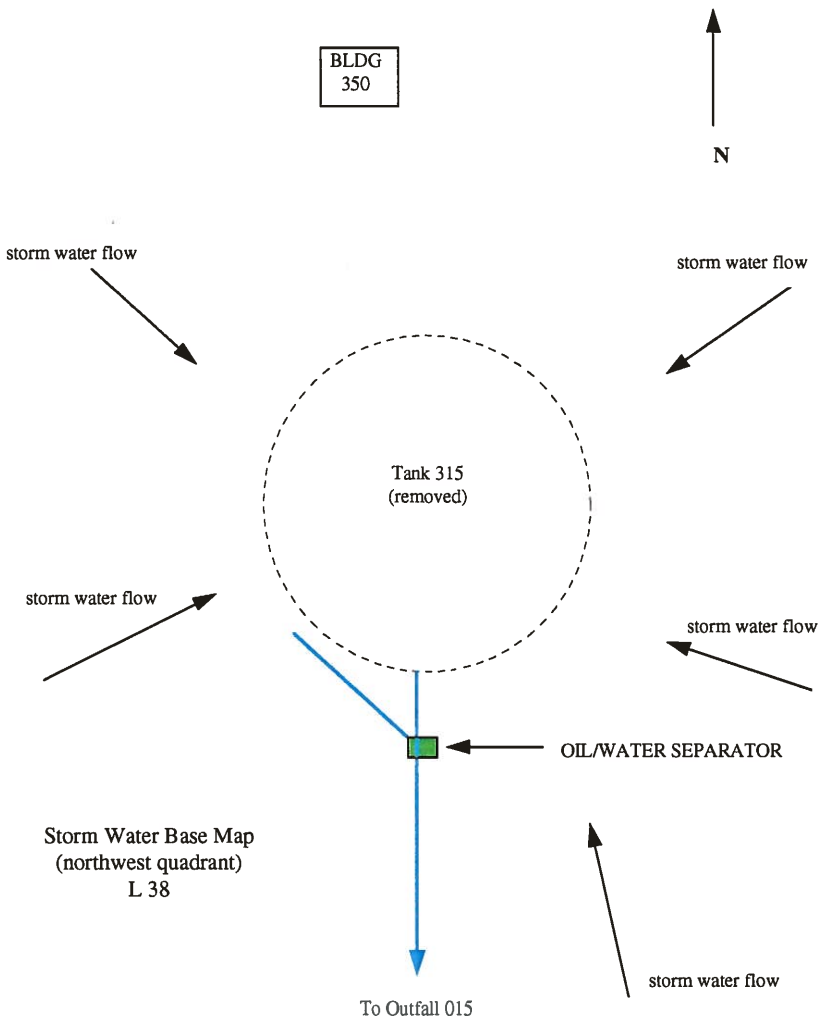
C. For each outfall, provide the location and a description of existing structural and nonstructural control measures to reduce pollutants in storm water runoff; and a description of the treatment the storm water receives, including the schedule and type of maintenance for control and treatment measures and the ultimate disposal of any solid or fluid wastes other than by discharge.

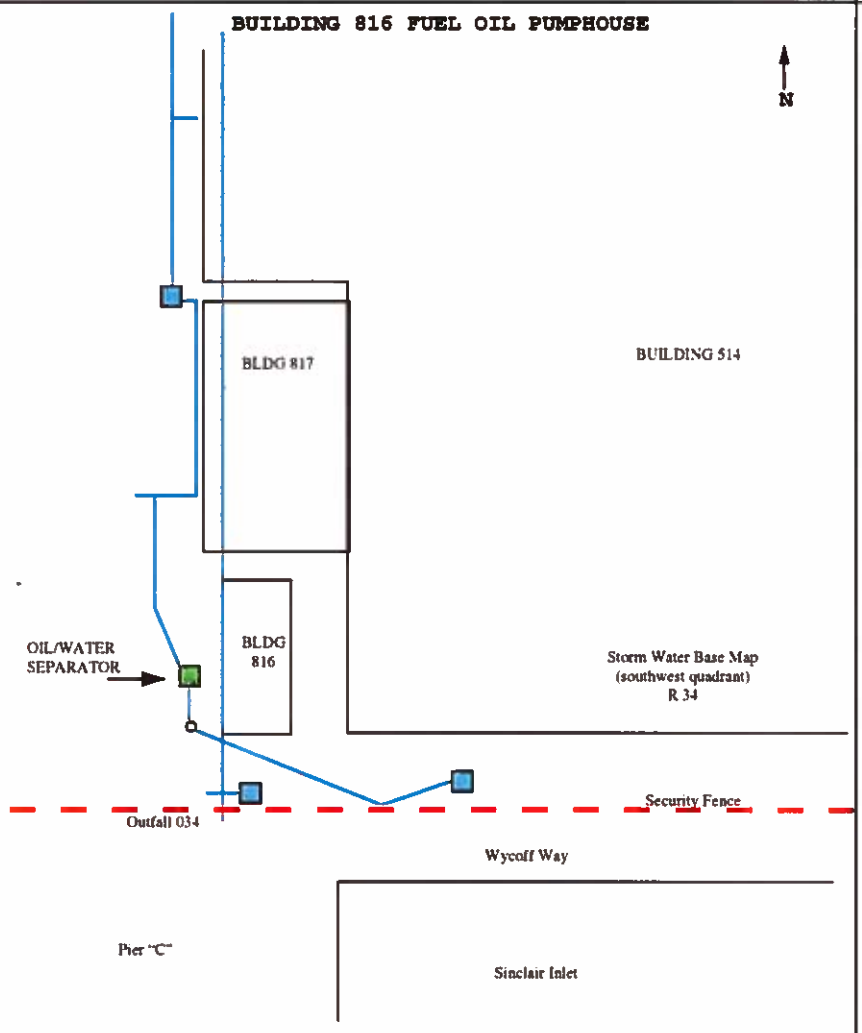
Outfall Number	Treatment	List codes from Table 2F-1
010	 An oil/water separator is located in the paved crane maintenance area east of building 450 which is drained by outfall 010. Streamguard™ catch basin filters are installed in the Building 455 south parking area which is drained by outfalls 010, 011 and 012. Maintenance is performed by Shop 07 for the oil/water separator. In winter months oil is removed from the separator for disposal. During summer months, the separator is completely cleaned. The catch basin filters are maintained by Shop 02.	

Outfall Number	Treatment	List codes from Table 2F-1
008	 An oil/water separator is located west of building 456. Maintenance is performed by Shop 07. In winter months oil is removed from the separator for disposal. During summer months, the separator is completely cleaned.	

Outfall Number	Treatment	List codes from Table 2F-1
093 094	 Five oil/water separators are installed in the west end parking lot. Maintenance is performed by Shop 07. In winter months oil is removed from the separator for disposal. During summer months, the separators are completely cleaned.	

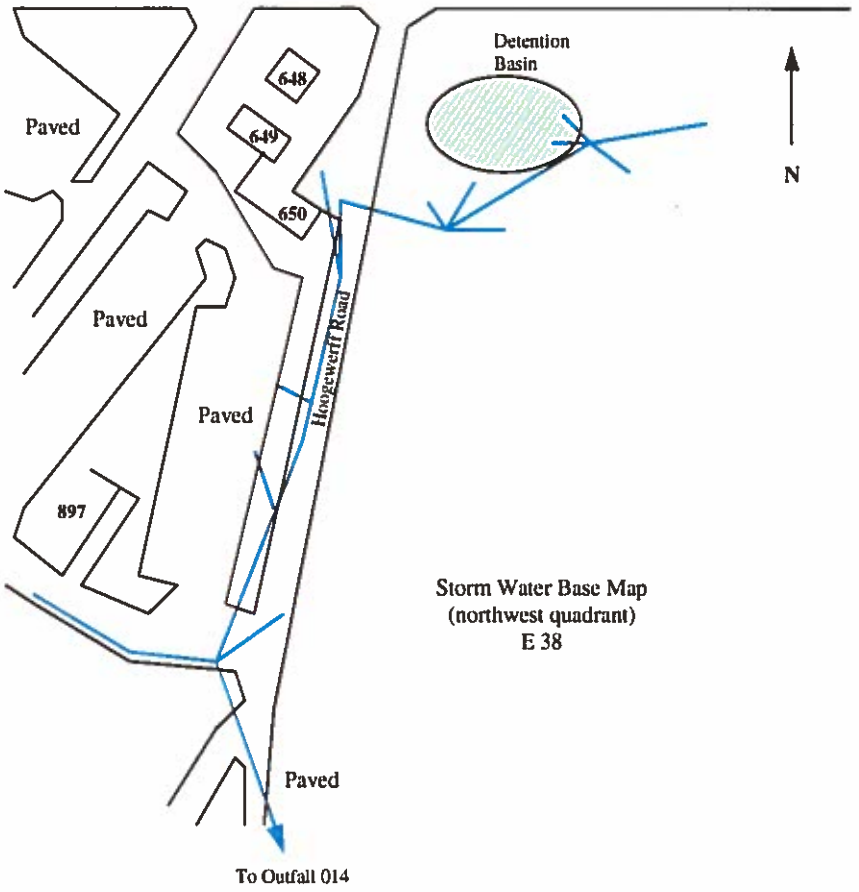
Outfall Number	Treatment	List codes from Table 2F-1
014	 Storm Water Base Map (northwest quadrant) F 29 An oil/water separator is located in the street on the south of the Commissary, Building 990. Maintenance is performed by Shop 07. In winter months oil is removed from the separator for disposal. During summer months, the separator is completely cleaned.	

Outfall Number	Treatment	List codes from Table 2F-1
014	 An oil/water separator has been located south of Tank 315 for the past three years. This separator was owned and maintained by FISC. Tank 315 has been removed.	

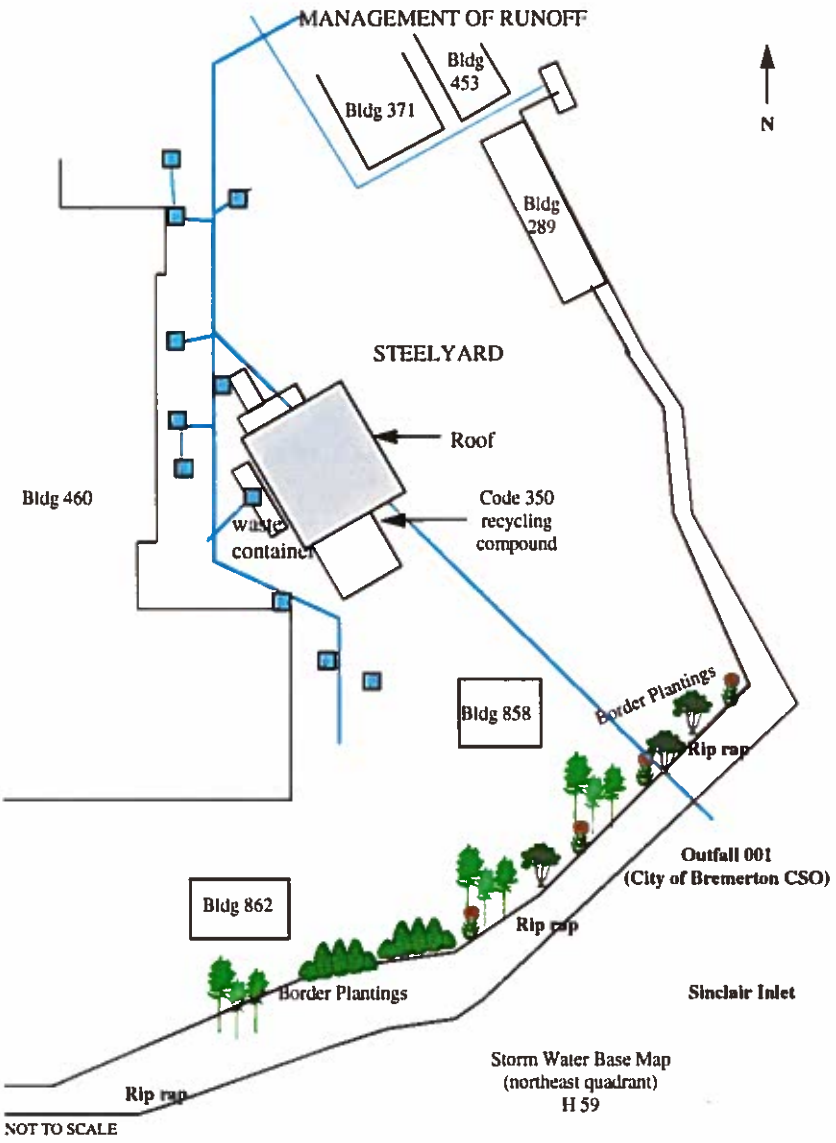
Outfall Number	Treatment	List codes from Table 2F-1
034		

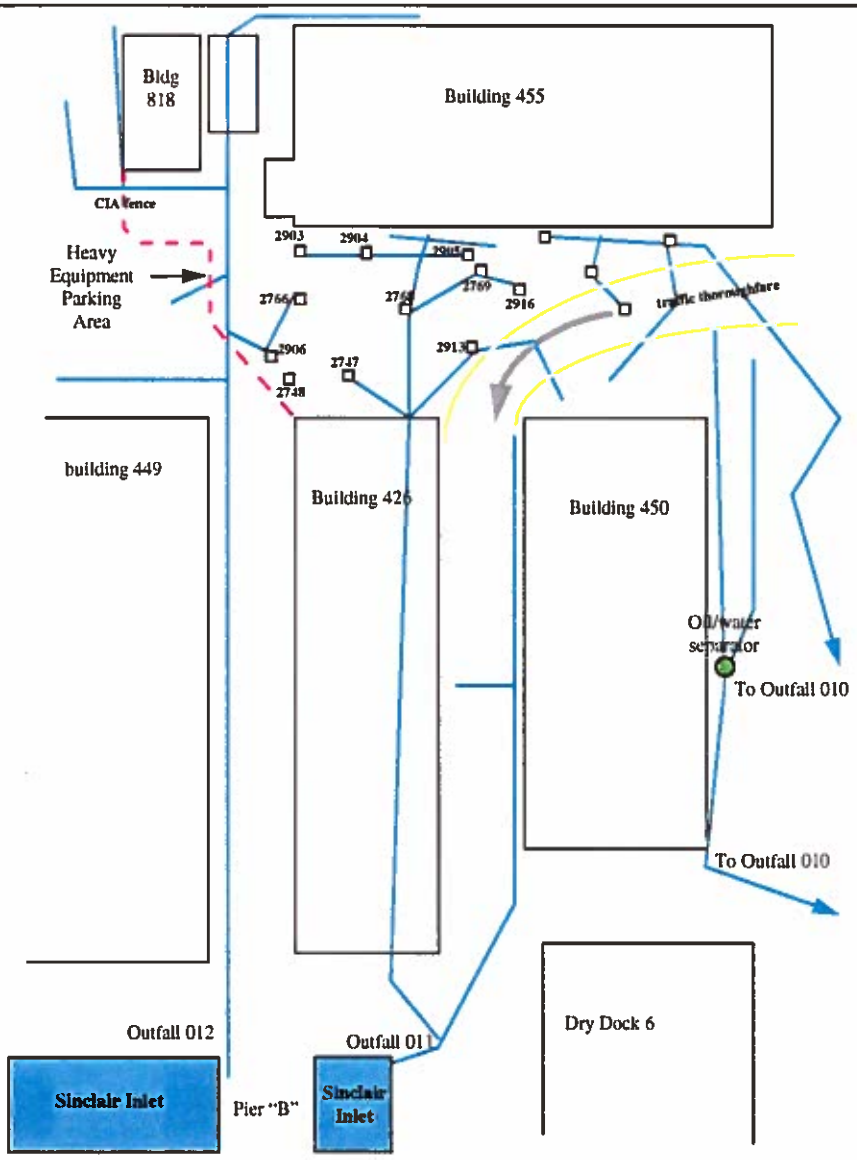
An oil/water separator is located west of Building 816. This separator is owned and maintained by FISC.

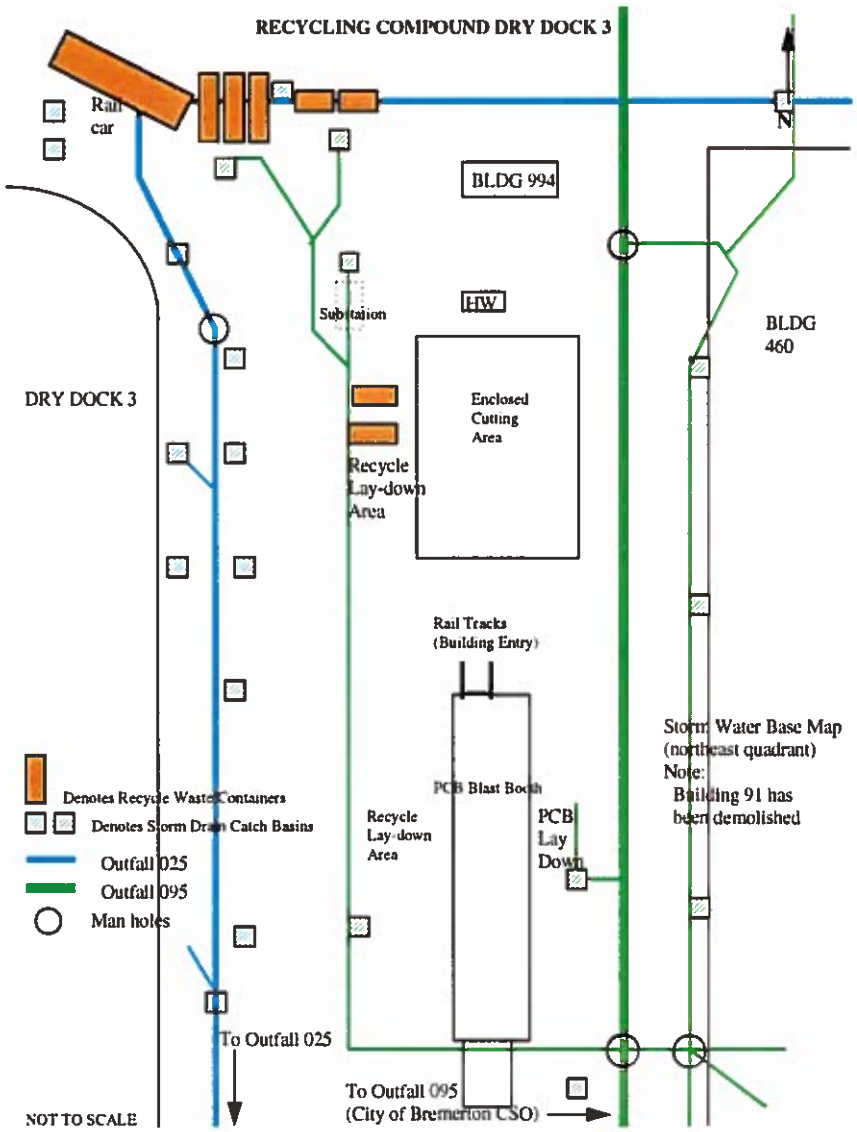
Outfall Number	Treatment	List codes from Table 2F-1
014	MANAHAN AVENUE RETENTION SWALE	



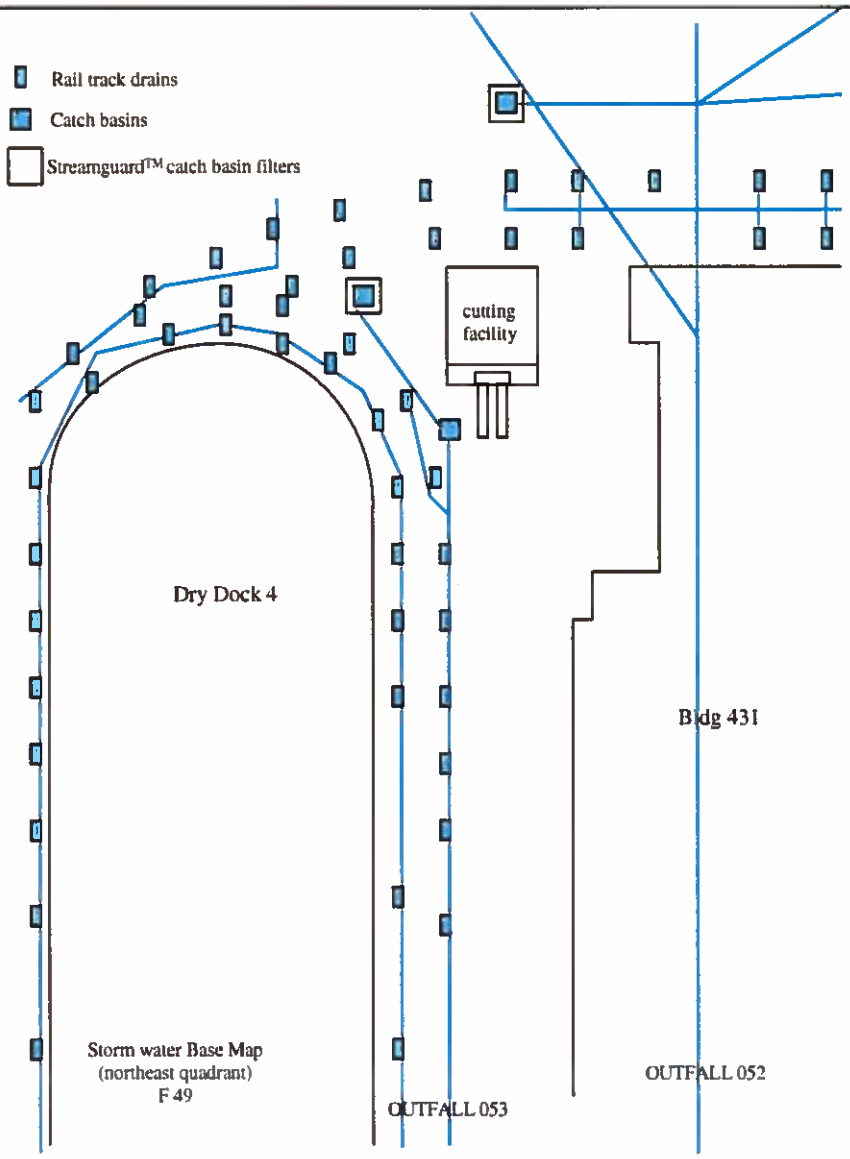
A detention basin is located on the south side of Mahan Avenue, east of Buildings 648 and 649. This area is maintained by Shop 07.

Outfall Number	Treatment	List codes from Table 2F-1
001	 Streamguard™ catch basin filters are installed in the drainage area of the recycling compound east of Building 460. Six catch basins have filters installed; #5314, #5316, #5317, #5318, #5319, and an unmarked catch basin south of #5314. These filters are installed and maintained by Code 350.	

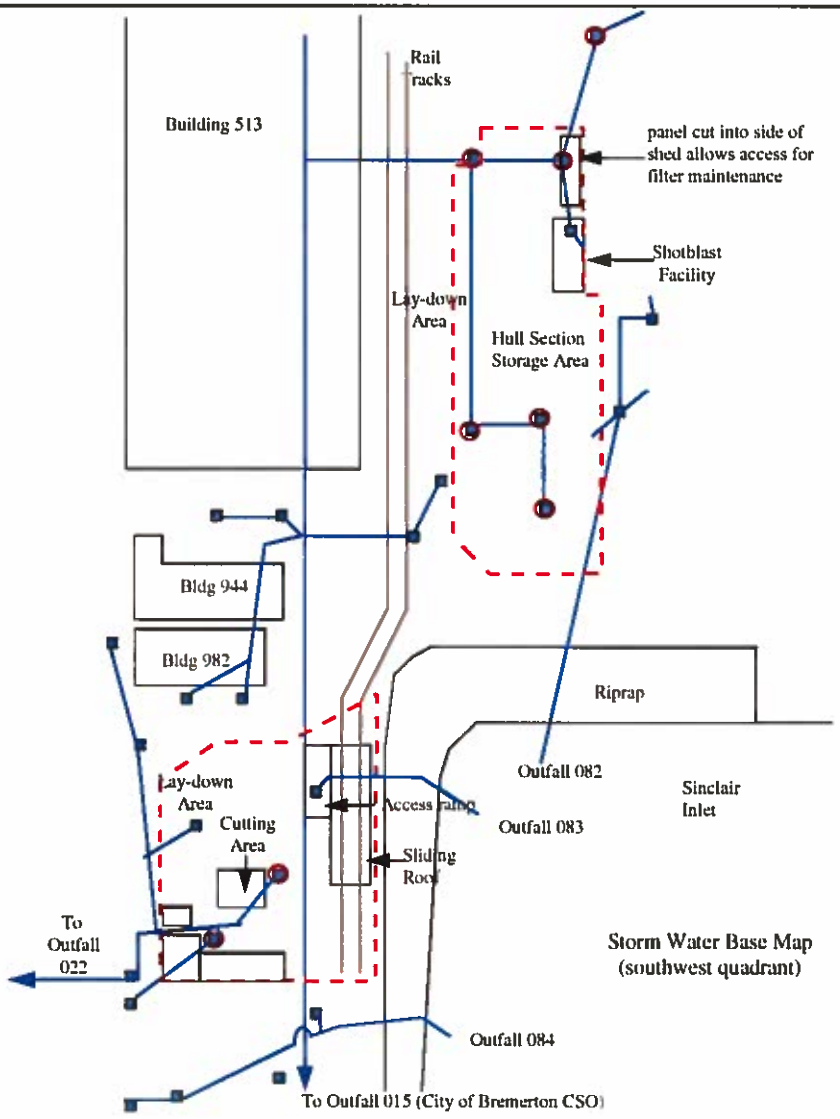
Outfall Number	Treatment	List codes from Table 2F-1
011 012	 Streamguard™ catch basin filters are installed in the drainage area of Building 455 parking area where vehicles and heavy equipment waiting repairs are parked. Eleven catch basins have filters installed as shown on drawing. These filters are installed and maintained by Shop 02.	

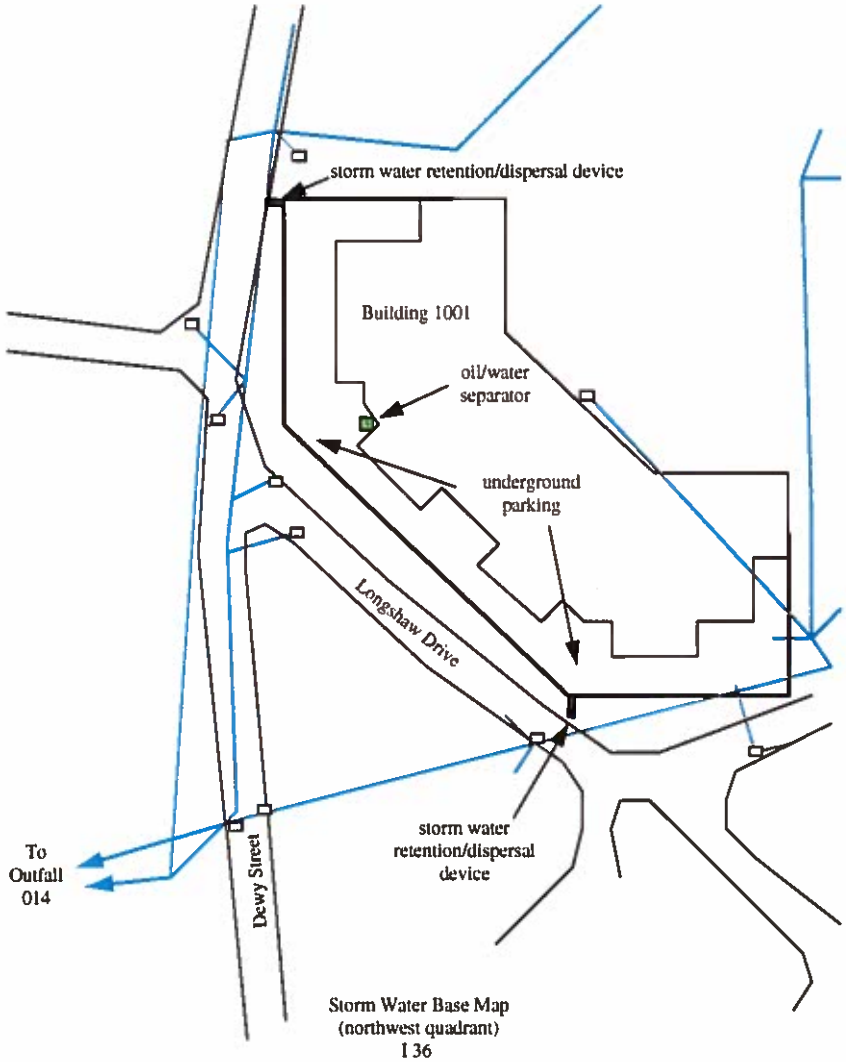
Outfall Number	Treatment	List codes from Table 2F-1
025		

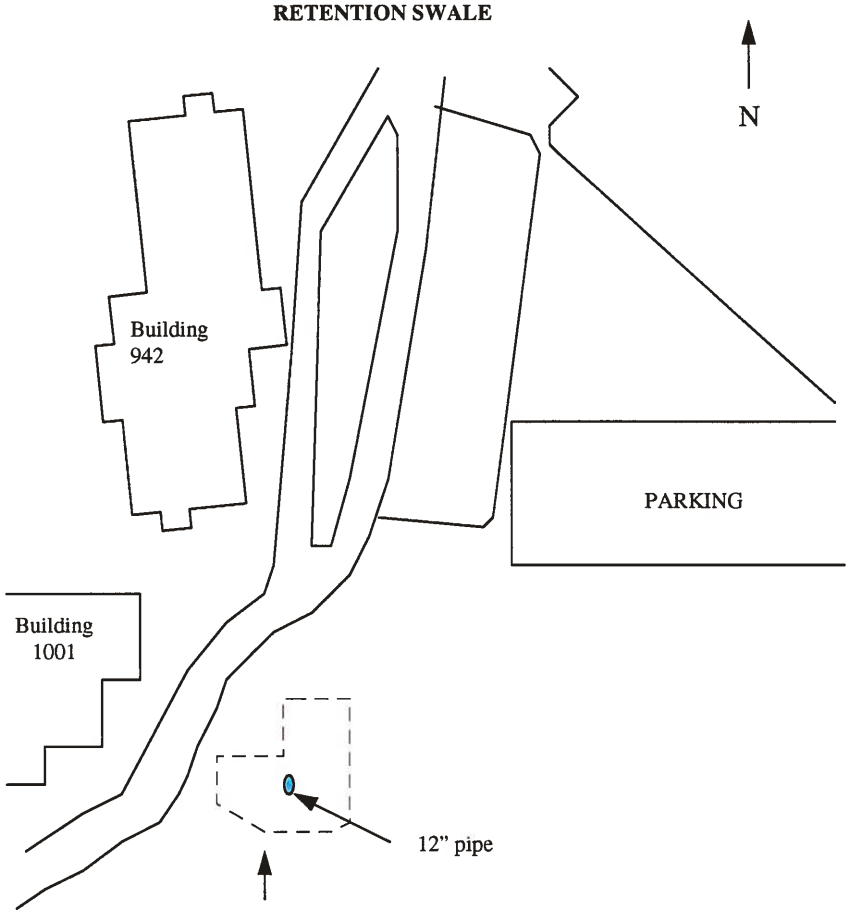
Streamguard™ catch basin filters are installed in the drainage area of the recycling compound at Dry Dock 3. Filters have been installed in nine catch basins; #6426, #5070, #5071, #5072, #5074, #5090, #5030, an unmarked drain south of #5130, and an unmarked drain south of #5090. These filters are installed and maintained by Code 350.

Outfall Number	Treatment	List codes from Table 2F-1
053		

Streamguard™ catch basin filters are installed in the drainage area of the recycling compound at Dry Dock 4. Two drains have filters installed; #4102 and #4089. These filters are installed and maintained by Code 350.

Outfall Number	Treatment	List codes from Table 2F-1
022 015 083	 Streamguard™ catch basin filters are installed under screens in the drainage area of the 513 recycling compound. The catch basins circled in red denote filter installation. These filters are replaced monthly by Code 350. The uncircled catch basins are under structures or in lay-down areas where access is restricted.	

Outfall Number	Treatment	List codes from Table 2F-1
014	 Storm Water Base Map (northwest quadrant) I 36 (Building 1001 is not shown on the Storm Water Base Map) An oil/water separator is installed in the parking garage of the Bachelor Enlisted Quarters, Building 1001. Maintenance is performed by Shop 07. In winter months oil is removed from the separator for disposal. During summer months, the separator is completely cleaned. Two retention/dispersion devices are installed outside the parking garage of this building.	

Outfall Number	Treatment	List codes from Table 2F-1
014	**RETENTION SWALE**  A retention swale is located south of Building 942. This area is maintained by Shop 07.	

V. Nonstormwater Discharges

A. I certify under penalty of law that the outfall(s) covered by this application have been tested or evaluated for the presence of nonstormwater discharges, and that all nonstormwater discharges from these outfall(s) are identified in either an accompanying Form 2C or Form 2E application for the outfall.

Name and Official Title (type or print)	Signature	Date Signed
MICKEY D. HALL FACILITIES ENGR. DIRECTOR		16 SEPT 98

B. Provide a description of the method used, the date of any testing, and the onsite drainage points that were directly observed during a test.

In 1991/1992 EMCON Northwest, Inc. surveyed the Shipyard storm sewer system in preparation of a storm water base map. Illicit blackwater connections were identified and corrected (Project 0611-011.18). A Sanitary Sewer to Storm Drain Illicit Cross Connection Study was conducted in the Shipyard in 1993 by Sitts and Hill Engineers, Inc. (Contract No. N44255-93-D-4156). The findings of this study were addressed in the Shipyard storm water pollution prevention plan (SWPPP).

VI. Significant Leaks or Spills

Provide existing information regarding the history of significant leaks or spills of toxic or hazardous pollutants at the facility in the last three years, including the approximate date and location of the spill or leak, and the type and amount of material released.

Type	Amount	Date	Location
DFM	*0.0625 gallons*	*03/11/1999*	*PIER-D*
Sewage	*110 gallons*	*04/08/1999*	*PIER-3*
DFM	*900 gallons*	*09/01/1999*	*PIER-D*
Lube Oil	*2 gallons*	*09/02/1999*	*PIER-6*
JP-5	*2 gallons*	*11/24/1999*	*DD6*
DFM	*30 gallons*	*03/27/2000*	*PIER-D*
JP-5	*3 gallons*	*07/31/2000*	*PIER-D*
Lube Oil	*2 gallons*	*08/17/2000*	*PIER-B*
DFM	*20 gallons*	*11/15/2000*	*Pier C*
DFM	*80 gallons*	*06/21/2001*	*PIER-4*
OIL	*3 gallons*	*06/27/2001*	*995 LOT*
DFM	*16 gallons*	*08/02/2001*	*PIER-C*

VII. discharge Information

A, B, C, & D: See instructions before proceeding. Complete one set of tables for each outfall. Annotate the outfall number in the space provided.

Tables VII-A, VII-B, and VII-C are included on separate sheets numbered VII-1 and VII-2.

E. Potential discharges not covered by analysis - is any toxic pollutant listed in table 2F-2, 2F-3 or 2F-4, a substance or a compound of a substance which you currently use or manufacture as an intermediate or final product or byproduct?

■ Yes (list all such pollutants below) * ☐ No (go to Section IX)

Table 2F-2
Chlorine (HSMS)
Fluoride (HSMS)
Nitrogen (HSMS)
Phosphorus (HSMS)
Sulfate (HSMS)
Sulfite (HSMS)
Surfacants
Boron (HSMS)
Molybdenum (HSMS, in cutting debris)
Tin (HSMS)
Titanium (HSMS, in cutting debris)

Table 2F-3
Phenols (HSMS)
Acrolein (HSMS, in cutting debris)
Acrylonitrile (HSMS, in cutting debris)
Benzene (HSMS)
Bromoform (HSMS)
Carbon Tetrachloride (HSMS)
Chlorobenzene (HSMS, in cutting debris)
Chloroform (HSMS)
1,2-Dichloroethane (HSMS)
1,1-Dichloroethylene (HSMS)
1,2-Dichloropropane (HSMS)
Methyl chloride (HSMS)
Toluene (HSMS)
1,1,1-Trichloroethane (HSMS)
Trichloroethylene (HSMS)
Vinyl chloride (HSMS)
1,2-Diphenylhydrazine (as Azobenzene), (HSMS)

Table 2F-4
Asbestos (HSMS)
Acetaldehyde (HSMS)
Allyl alcohol (HSMS)
Amyl acetate (HSMS)
Butyl acetate (NSMS)
Carbon disulfide (HSMS)
Chlorpyrifos (HSMS)
Cresol (HSMS)
Cyclohexane (HSMS)
2,4-Dichlorophenoxyacetic acid (HSMS)
Diazinon (HSMS)
Dicamba (HSMS)
Diuron (HSMS)
Epichlorohydrin (HSMS)
Formaldehyde (HSMS)
Furfural (HSMS)
Isopropanolamine (HSMS)
Methyl methacrylate (HSMS)
Propylene oxide (HSMS)
Resorcinol (HSMS)
Strychnine (HSMS)
Styrene (HSMS)
Triethylamine (HSMS)
Trimethylamine (HSMS)
Vanadium (HSMS)
Vinyl acetate (HSMS)
Xylene (HSMS)
Xylenol (HSMS)
Zirconium (HSMS)

* Substances with the "(HSMS)" designation are listed because they are contained in materials/products used in the Shipyard.

VIII. Biological Toxicity Testing Data

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last three years?

☐ Yes (list all such pollutants below) ■ No (go to Section IX)

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IX. Contract Analysis Information

Were any of the analysis reported in item VII performed by a contract laboratory or consulting firm?

■ Yes (list the name, address, and telephone number of, and pollutants analyzed by, each such laboratory or firm below) ☐ No (go to Section X)

A. Name	B. Address	C. Area Code & Phone No.	D. Pollutants Analyzed
URS, Consultants, Inc.	1100 Olive Way, Suite 200	(206) 623-1800	TSS Arsenic Cadmium Chromium Copper Lead Mercury Nickel Zinc Aluminum Barium Beryllium Molybdenum Titanium Cobolt Manganese Vanadium Magnesium Iron Antimony Selenium Gasoline Diesel

X. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. Name & Official Title (type or print)	B. Area Code and Phone No.
G. M. SHERRELL, HEAD, ENVIRONMENTAL DIVISION ENVIRONMENT, SAFETY, AND HEALTH OFFICE "ACTING"	(360) 476-6009
C. Signature	D. Date Signed
[signature]	4/30/98

VII. Discharge Information (Continued from page 3 of Form 2F) for Outfall 002

Part A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Oil and Grease	N/A	N/A	N/A	N/A		
TPH	1.0 mg/L	NA	0.25 mg/L	NA	4	Vehicals and equipment
Biological Oxygen Demand (BOD5)	7.0 mg/L	N/A	4.67 mg/L	N/A	3	Organic matter
Chemical Oxygen Demand (COD)	140 mg/L	N/A	105.66 mg/L	N/A	3	Organic matter
Total Suspended Solids (TSS)	*25.0* mg/L	N/A	*21.2* mg/L	N/A	*5*	Suspended matter in surface runoff
Total Kjeldahl Nitrogen	N/A	N/A	N/A	N/A	[A]	
Nitrate plus Nitrite Nitrogen	N/A	N/A	N/A	N/A	[A]	
Total Phosphorus	N/A	N/A	N/A	N/A	[A]	[B]
	Minimum		Maximum			
pH	7.1	N/A	7.8	N/A	4	

[A] Under the current NPDES permit, the Shipyard is considered an industrial facility and sampling for these parameters was not required. Per a telephone communication between Dave Ragsdale, EPA Region X, and Matt Jabloner, Water Program Manager, Puget Sound Naval Shipyard, dated 19 Nov 97, three years of sampling under the current NPDES permit has sufficiently characterized the Shipyard storm water discharges. Mr. Ragsdale concurred that limited additional sampling for purposes of this application would not add to the knowledge base about the quality of those discharges and storm water sampling results obtained during the current permit would be sufficient for purposes of this application.

[B] Sources of this pollutant (detergents, boiler waters, fertilizers, body wastes, food residues) are not discharged into this outfall

Part B - List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Arsenic	10 µg/L	NA	*2.8* µg/L	NA	*5*	Treated wood
Cadmium	*1* µg/L	NA	*0.2* µg/L	NA	*5*	Paint
Chromium	*15* µg/L	NA	*6.0* µg/L	NA	*5*	Vessel disposal operations
Copper	*230* µg/L	NA	*121* µg/L	NA	*5*	Vessel disposal operations
Lead	*99* µg/L	NA	*32.8* µg/L	NA	*5*	Past practices [A]
Mercury	0.2 µg/L	NA	*0.04* µg/L	NA	*5*	Past practices [B]
Nickel	*180* µg/L	NA	*59.0* µg/L	NA	*5*	Vessel recycle operations
Zinc	*360* µg/L	NA	*247* µg/L	NA	*5*	Galvanized metal

[A] In the past, raw lead used for ballast and shielding was stored outdoors, exposed to storm water

[B] This outfall drains an area of Installation Restoration Site 10 east. Some of the pollutants in this outfall may have migrated from fill materials surrounding this storm sewer system.

Part C - List each pollutant shown in Tables 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		

Part D - Provide data for the storm events which resulted in the maximum values for the flow weighted composite sample.

Note: Flow weighted composite samples were not required by the Shipyards NPDES permit. Specific rainfall event information is available if requested.

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VII. Discharge Information (Continued from page 3 of Form 2F) for Outfall 003

Part A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Oil and Grease	N/A	N/A	N/A	N/A	N/A	
TPH	1.5 mg/L	N/A	0.5 mg/L	N/A	4	Vehicles and equipment
Biological Oxygen Demand (BOD5)	Not detected	N/A	Not detected	N/A	3	Organic matter
Chemical Oxygen Demand (COD)	24 mg/L	N/A	8 mg/L	N/A	3	Organic matter
Total Suspended Solids (TSS)	11 mg/L	N/A	7.9 mg/L	N/A	4	Suspended matter in surface runoff
Total Kjeldahl Nitrogen	N/A	N/A	N/A	N/A	[A]	
Nitrate plus Nitrite Nitrogen	N/A	N/A	N/A	N/A	[A]	
Total Phosphorus	N/A	N/A	N/A	N/A	[A]	[B]
	Minimum		Maximum			
pH	7.6	N/A	8.2	N/A	3	

[A] Under the current NPDES permit, the Shipyard is considered an industrial facility and sampling for these parameters was not required. Per a telephone communication between Dave Ragsdale, EPA Region X, and Matt Jabloner, Water Program Manager, Puget Sound Naval Shipyard, dated 19 Nov 97, three years of sampling under the current NPDES permit has sufficiently characterized the Shipyard storm water discharges. Mr. Ragsdale concurred that limited additional sampling for purposes of this application would not add to the knowledge base about the quality of those discharges and storm water sampling results obtained during the current permit would be sufficient for purposes of this application.

[B] Sources of this pollutant (detergents, boiler waters, fertilizers, body wastes, food residues) are not discharged into this outfall

Part B - List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Arsenic	Not detected	N/A	Not detected	N/A	4	
Cadmium	Not detected	N/A	Not detected	N/A	4	
Chromium	Not detected	N/A	Not detected	N/A	4	
Copper	200 µg/L	N/A	82 µg/L	N/A	4	Vessel recycle operations
Lead	19 µg/L	N/A	10.9 µg/L	N/A	4	Vessel recycle operations
Mercury	Not detected	N/A	Not detected	N/A	4	
Nickel	8.9 µg/L	N/A	6.5 µg/L	N/A	4	Vessel recycle operations
Zinc	230 µg/L	N/A	147.8 µg/L	N/A	4	Vessel recycle operations
Semi-volatile Organics	Di-n-butylphthalate - 34.0 µg/L	N/A	13.43 µg/L	N/A	3	This substance was detected twice and was also found in the method blank both times.

Part C - List each pollutant shown in Tables 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Chlorine		N/A		N/A		Potable water

Part D - Provide data for the storm events which resulted in the maximum values for the flow weighted composite sample.
Note: Flow weighted composite samples were not required by the Shipyards NPDES permit. Specific rainfall event information is available if requested.

VII. Discharge Information (Continued from page 3 of Form 2F) for Outfall 006

Part A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Oil and Grease	N/A	N/A	N/A	N/A	N/A	
TPH	Not detected	N/A	Not detected	N/A	3	Vehicles and equipment
Biological Oxygen Demand (BOD5)	10 mg/L	N/A	5 mg/L	N/A	2	Organic matter
Chemical Oxygen Demand (COD)	24 mg/L	N/A	18.7 mg/L	N/A	3	Organic matter
Total Suspended Solids (TSS)	*54* mg/L	N/A	*26.0* mg/L	N/A	*3*	Suspended matter in surface runoff
Total Kjeldahl Nitrogen	N/A	N/A	N/A	N/A	[A]	
Nitrate plus Nitrite Nitrogen	N/A	N/A	N/A	N/A	[A]	
Total Phosphorus	N/A	N/A	N/A	N/A	[A]	[B]
	Minimum		Maximum			
pH	7.2	N/A	7.6	N/A	3	

[A] Under the current NPDES permit, the Shipyard is considered an industrial facility and sampling for these parameters was not required. Per a telephone communication between Dave Ragsdale, EPA Region X, and Matt Jabloner, Water Program Manager, Puget Sound Naval Shipyard, dated 19 Nov 97, three years of sampling under the current NPDES permit has sufficiently characterized the Shipyard storm water discharges. Mr. Ragsdale concurred that limited additional sampling for purposes of this application would not add to the knowledge base about the quality of those discharges and storm water sampling results obtained during the current permit would be sufficient for purposes of this application.

[B] Sources of this pollutant (detergents, boiler waters, fertilizers, body wastes, food residues) are not discharged into this outfall.

Part B - List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Arsenic	*12 µg/L*	N/A	*3.0 µg/L*	N/A	4	Treated wood
Cadmium	*1.4 µg/L*	N/A	*0.4 µg/L*	N/A	4	Paint
Chromium	*Not Detected*	N/A	*Not Detected*	N/A	4	Vessel disposal operations.
Copper	*450 µg/L*	N/A	*209 µg/L*	N/A	4	Vessel disposal operations.
Lead	*57.0 µg/L*	N/A	*33.8 µg/L*	N/A	4	Shielding and ballsat
Mercury	*Not Detected*	N/A	*Not Detected*	N/A	4	Past practices
Nickel	*50.0 µg/L*	N/A	*31.0 µg/L*	N/A	4	Vessel disposal operations.
Zinc	*540 µg/L*	N/A	*395 µg/L*	N/A	4	Galvanized metal.
Di-n-butylphthalate	12 µg/L	N/A	*6.0 µg/L*	N/A	*3*	This compound was found twice, once also in the method blank.
Bis (2-ethylhexyl) phthalate	*11.2 µg/L*	N/A	*6.1 µg/L*	N/A	3	Liquid used in vacuum pumps.

Part C - List each pollutant shown in Tables 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		

Part D - Provide data for the storm events which resulted in the maximum values for the flow weighted composite sample.

Note: Flow weighted composite samples were not required by the Shipyards NPDES permit. Specific rainfall event information is available if requested.

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VII. Discharge Information (Continued from page 3 of Form 2F) for Outfall 010

Part A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Oil and Grease	N/A	N/A	N/A	N/A	A	
Biological Oxygen Demand (BOD5)	N/A	N/A	N/A	N/A	A	
Chemical Oxygen Demand (COD)	N/A	N/A	N/A	N/A	A	
Total Suspended Solids (TSS)	N/A	N/A	N/A	N/A	A	
Total Kjeldahl Nitrogen	N/A	N/A	N/A	N/A	A	
Nitrate plus Nitrite Nitrogen	N/A	N/A	N/A	N/A	A	
Total Phosphorus	N/A	N/A	N/A	N/A	A	
pH	Minimum N/A	Maximum N/A	Minimum N/A	Maximum N/A	A	

A Under the current NPDES permit, the Shipyard is considered an industrial facility and sampling for these parameters was not required. Per a telephone communication between Dave Ragsdale, EPA Region X, and Matt Jabloner, Water Program Manager, Puget Sound Naval Shipyard, dated 19 Nov 97, three years of sampling under the current NPDES permit has sufficiently characterized the Shipyard storm water discharges. Mr. Ragsdale concurred that limited additional sampling for purposes of this application would not add to the knowledge base about the quality of those discharges and storm water sampling results obtained during the current permit would be sufficient for purposes of this application.

Part B - List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Arsenic	2.4 µg/L	N/A	0.6 µg/L	N/A	4	Treated wood, vessel disposal operations
Cadmium	1.2 µg/L	N/A	0.55 µg/L	N/A	4	Paint, metal finishing
Chromium	34 µg/L	N/A	13.5 µg/L	N/A	4	Treated wood, metal finishing
Copper	240 µg/L	N/A	137 µg/L	N/A	4	Treated wood, electroplating, paint
Lead	950 µg/L	N/A	248.5 µg/L	N/A	4	Lead-acid batteries (old battery shop)
Mercury	1.1 µg/L	N/A	0.64 µg/L	N/A	4	Past practices
Nickel	52 µg/L	N/A	27 µg/L	N/A	4	Electroplating, battery electrodes
Zinc	490 µg/L	N/A	324.3 µg/L	N/A	4	Treated wood, galvanized metal.
Cyanide	Not detected	N/A	Not detected	N/A	4	

Part C - List each pollutant shown in Tables 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		

Part D - Provide data for the storm events which resulted in the maximum values for the flow weighted composite sample.

Note: Flow weighted composite samples were not required by the Shipyards NPDES permit. Specific rainfall event information is available if requested.

VII. Discharge Information (Continued from page 3 of Form 2F) for Outfall 012

Part A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Oil and Grease	N/A	N/A	N/A	N/A	N/A	
TPH	8.8 mg/L	N/A	3.7 mg/L	N/A	5	Vehicles and equipment
Biological Oxygen Demand (BOD5)	7 mg/L	N/A	2.6 mg/L	N/A	5	Organic matter
Chemical Oxygen Demand (COD)	85 mg/L	N/A	45.8 mg/L	N/A	5	Organic matter
Total Suspended Solids (TSS)	210 mg/L	N/A	82 mg/L	N/A	5	Suspended matter in surface runoff
Total Kjeldahl Nitrogen	N/A	N/A	N/A	N/A	[A]	
Nitrate plus Nitrite Nitrogen	N/A	N/A	N/A	N/A	[A]	
Total Phosphorus	N/A	N/A	N/A	N/A	[A]	
	Minimum		Maximum			
pH	6.97	N/A	7.5	N/A	5	

[A] Under the current NPDES permit, the Shipyard is considered an industrial facility and sampling for these parameters was not required. Per a telephone communication between Dave Ragsdale, EPA Region X, and Matt Jabloner, Water Program Manager, Puget Sound Naval Shipyard, dated 19 Nov 97, three years of sampling under the current NPDES permit has sufficiently characterized the Shipyard storm water discharges. Mr. Ragsdale concurred that limited additional sampling for purposes of this application would not add to the knowledge base about the quality of those discharges and storm water sampling results obtained during the current permit would be sufficient for purposes of this application.

Part B - List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Arsenic	5.6 µg/L	N/A	1.4 µg/L	N/A	5	Motor fuel additive, treated wood
Cadmium	4.3 µg/L	N/A	1.8 µg/L	N/A	5	Paint
Chromium	41 µg/L	N/A	13.6 µg/L	N/A	5	Anti-knock compounds
Copper	190 µg/L	N/A	100.2 µg/L	N/A	5	Antifreeze leaks containg radiator corrosion
Lead	140 µg/L	N/A	64 µg/L	N/A	5	Anti-knock compounds (past use), hydraulic fluids, lubricants
Mercury	0.24 µg/L	N/A	0.05 µg/L	N/A	5	Past practices
Nickel	48 µg/L	N/A	24.2 µg/L	N/A	5	
Zinc	630 µg/L	N/A	349 µg/L	N/A	5	Corrosion inhibitor in hydraulic fluids

Part C - List each pollutant shown in Tables 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		

Part D - Provide data for the storm events which resulted in the maximum values for the flow weighted composite sample.

Note: Flow weighted composite samples were not required by the Shipyards NPDES permit. Specific rainfall event information is available if requested.

VII. Discharge Information (Continued from page 3 of Form 2F) for Outfall 013

Part A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Oil and Grease	N/A	N/A	N/A	N/A	N/A	
TPH	8.1 mg/L	N/A	3 mg/L	N/A	4	Vehicles and equipment
Biological Oxygen Demand (BOD5)	24 mg/L	N/A	8.7 mg/L	N/A	4	Organic matter
Chemical Oxygen Demand (COD)	87 mg/L	N/A	55 mg/L	N/A	4	Organic matter
Total Suspended Solids (TSS)	43 mg/L	N/A	24.9 mg/L	N/A	4	Suspended matter in surface runoff
Total Kjeldahl Nitrogen	N/A	N/A	N/A	N/A	[A]	
Nitrate plus Nitrite Nitrogen	N/A	N/A	N/A	N/A	[A]	
Total Phosphorus	N/A	N/A	N/A	N/A	[A]	[B]
	Minimum		Maximum			
pH	7.3	N/A	7.4	N/A	4	

[A] Under the current NPDES permit, the Shipyard is considered an industrial facility and sampling for these parameters was not required. Per a telephone communication between Dave Ragsdale, EPA Region X, and Matt Jabloner, Water Program Manager, Puget Sound Naval Shipyard, dated 19 Nov 97, three years of sampling under the current NPDES permit has sufficiently characterized the Shipyard storm water discharges. Mr. Ragsdale concurred that limited additional sampling for purposes of this application would not add to the knowledge base about the quality of those discharges and storm water sampling results obtained during the current permit would be sufficient for purposes of this application.

[B] Sources of this pollutant (detergents, boiler waters, fertilizers, body wastes, food residues) are not discharged into this outfall.

Part B - List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Arsenic	3 µg/L	N/A	1.25 µg/L	N/A	4	Treated wood
Cadmium	3 µg/L	N/A	1.75 µg/L	N/A	4	Paint on scrap metal
Chromium	13 µg/L	N/A	3.25 µg/L	N/A	4	Scrap metal from vessel recycling
Copper	50 µg/L	N/A	38.5 µg/L	N/A	4	Scrap metal from vessel recycling
Lead	27 µg/L	N/A	15 µg/L	N/A	4	Scrap metal from vessel recycling
Mercury	Not detected	N/A	Not detected	N/A	4	
Nickel	21 µg/L	N/A	11.5 µg/L	N/A	4	Scrap metal from vessel recycling
Zinc	150 µg/L	N/A	113 µg/L	N/A	4	Scrap metal from vessel recycling
Bis(2-ethylhexyl) phthalate	28.07 µg/L	N/A	12.1 µg/L	N/A	4	Vacuum pumps
Di-n-butylphthalate	63.44 µg/L	N/A	15.9 µg/L	N/A	4	Plastics and resins

Part C - List each pollutant shown in Tables 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		

Part D - Provide data for the storm events which resulted in the maximum values for the flow weighted composite sample.

Note: Flow weighted composite samples were not required by the Shipyards NPDES permit. Specific rainfall event information is available if requested.

4/12/02 Replacement

VII. Discharge Information (Continued from page 3 of Form 2F) for Outfall 014

Part A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Oil and Grease	N/A	N/A	N/A	N/A	N/A	
TPH	4.4 mg/L	N/A	3.1 mg/L	N/A	4	Vehicles and equipment
Biological Oxygen Demand (BOD5)	38 mg/L	N/A	12 mg/L	N/A	4	Organic matter
Chemical Oxygen Demand (COD)	89 mg/L	N/A	70 mg/L	N/A	4	Organic matter
Total Suspended Solids (TSS)	350 mg/L	N/A	141.3 mg/L	N/A	3	Suspended matter in surface runoff
Total Kjeldahl Nitrogen	N/A	N/A	N/A	N/A	^	
Nitrate plus Nitrite Nitrogen	N/A	N/A	N/A	N/A	^	
Total Phosphorus	N/A	N/A	N/A	N/A	^	
	Minimum		Maximum			
pH	7.6	N/A	8.4	N/A	4	

^ Under the current NPDES permit, the Shipyard is considered an industrial facility and sampling for these parameters was not required. Per a telephone communication between Dave Ragsdale, EPA Region X, and Matt Jabloner, Water Program Manager, Puget Sound Naval Shipyard, dated 19 Nov 97, three years of sampling under the current NPDES permit has sufficiently characterized the Shipyard storm water discharges. Mr. Ragsdale concurred that limited additional sampling for purposes of this application would not add to the knowledge base about the quality of those discharges and storm water sampling results obtained during the current permit would be sufficient for purposes of this application.

Part B - List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Arsenic	13 µg/L	N/A	4.0 µg/L	N/A	4	Past practices* and surface runoff
Cadmium	2.1 µg/L	N/A	0.8 µg/L	N/A	4	Past practices* and surface runoff
Chromium	52 µg/L	N/A	17.3 µg/L	N/A	4	Past practices* and surface runoff
Copper	260 µg/L	N/A	114 µg/L	N/A	4	Past practices* and surface runoff
Lead	500 µg/L	N/A	140.8 µg/L	N/A	4	Past practices* and surface runoff
Mercury	13 µg/L	N/A	3.3 µg/L	N/A	4	Past practices* and surface runoff
Nickel	69 µg/L	N/A	29.5 µg/L	N/A	4	Past practices* and surface runoff
Zinc	820 µg/L	N/A	390 µg/L	N/A	4	Past practices* and surface runoff

* This outfall drains an area of Installation Restoration Site 10 west. Some of the pollutants in this outfall may have migrated from fill materials surrounding this storm sewer system.

Part C - List each pollutant shown in Tables 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		

Part D - Provide data for the storm events which resulted in the maximum values for the flow weighted composite sample.

Note: Flow weighted composite samples were not required by the Shipyards NPDES permit. Specific rainfall event information is available if requested.

VII. Discharge Information (Continued from page 3 of Form 2F) for Outfall 022

Part A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Oil and Grease	N/A	N/A	N/A	N/A	N/A	
TPH	3.8 mg/L	N/A	1.9 mg/L	N/A	4	Vehicles and equipment
Biological Oxygen Demand (BOD5)	4 mg/L	N/A	1.3 mg/L	N/A	3	Organic matter
Chemical Oxygen Demand (COD)	110 mg/L	N/A	50.8 mg/L	N/A	4	Organic matter
Total Suspended Solids (TSS)	420 mg/L	N/A	196.2 mg/L	N/A	4	Suspended matter in surface runoff
Total Kjeldahl Nitrogen	N/A	N/A	N/A	N/A	[A]	
Nitrate plus Nitrite Nitrogen	N/A	N/A	N/A	N/A	[A]	
Total Phosphorus	N/A	N/A	N/A	N/A	[A]	[B]
	Minimum		Maximum			
pH	7.5	N/A	9.6	N/A	4	

[A] Under the current NPDES permit, the Shipyard is considered an industrial facility and sampling for these parameters was not required. Per a telephone communication between Dave Ragsdale, EPA Region X, and Matt Jabloner, Water Program Manager, Puget Sound Naval Shipyard, dated 19 Nov 97, three years of sampling under the current NPDES permit has sufficiently characterized the Shipyard storm water discharges. Mr. Ragsdale concurred that limited additional sampling for purposes of this application would not add to the knowledge base about the quality of those discharges and storm water sampling results obtained during the current permit would be sufficient for purposes of this application.

[B] Sources of this pollutant (detergents, boiler waters, fertilizers, body wastes, food residues) are not discharged into this outfall.

Part B - List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		

Per NPDES permit number WA-000206-2, only conventional pollutants required analysis for outfall 022. During sampling on 22 March 96, the facility analyzed metals in an attempt to determine the source of the high suspended solids. Results are given in Part C below.

Part C - List each pollutant shown in Tables 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Arsenic	3 µg/L	N/A	3 µg/L	N/A	1	Treated wood, vessel disposal operations
Cadmium	2 µg/L	N/A	2 µg/L	N/A	1	Paint
Chromium	13 µg/L	N/A	13 µg/L	N/A	1	Vessel disposal operations
Copper	170 µg/L	N/A	170 µg/L	N/A	1	Vessel disposal operations
Lead	50 µg/L	N/A	50 µg/L	N/A	1	Vessel disposal operations
Mercury	Not detected	N/A	Not detected	N/A	1	
Nickel	53 µg/L	N/A	53 µg/L	N/A	1	Vessel disposal operations
Zinc	440 µg/L	N/A	440 µg/L	N/A	1	Vessel disposal operations

Part D - Provide data for the storm events which resulted in the maximum values for the flow weighted composite sample.
Note: Flow weighted composite samples were not required by the Shipyards NPDES permit. Specific rainfall event information is available if requested.

VII. Discharge Information (Continued from page 3 of Form 2F) for Outfall 025

Part A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Oil and Grease	N/A	N/A	N/A	N/A	N/A	
TPH	8 mg/L	N/A	3.5 mg/l	N/A	5	Vehicles and equipment
Biological Oxygen Demand (BOD5)	6 mg/L	N/A	3 mg/L	N/A	2	Organic matter
Chemical Oxygen Demand (COD)	240 mg/L	N/A	115.3 mg/L	N/A	3	Organic matter
Total Suspended Solids (TSS)	120 mg/L	N/A	68 mg/L	N/A	4	Suspended matter in surface runoff
Total Kjeldahl Nitrogen	N/A	N/A	N/A	N/A	[A]	
Nitrate plus Nitrite Nitrogen	N/A	N/A	N/A	N/A	[A]	
Total Phosphorus	N/A	N/A	N/A	N/A	[A]	[B]
	Minimum		Maximum			
pH	7.0	N/A	9.3	N/A	4	

[A] Under the current NPDES permit, the Shipyard is considered an industrial facility and sampling for these parameters was not required. Per a telephone communication between Dave Ragsdale, EPA Region X, and Matt Jabloner, Water Program Manager, Puget Sound Naval Shipyard, dated 19 Nov 97, three years of sampling under the current NPDES permit has sufficiently characterized the Shipyard storm water discharges. Mr. Ragsdale concurred that limited additional sampling for purposes of this application would not add to the knowledge base about the quality of those discharges and storm water sampling results obtained during the current permit would be sufficient for purposes of this application.

[B] Sources of this pollutant (detergents, boiler waters, fertilizers, body wastes, food residues) are not discharged into this outfall.

Part B - List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Arsenic	5.5 µg/L	N/A	1.1 µg/L	N/A	5	Treated wood, vessel disposal operations
Cadmium	6 µg/L	N/A	2.42 µg/L	N/A	5	Paint
Chromium	200 µg/L	N/A	50.2 µg/L	N/A	5	Vessel disposal operations
Copper	1300 µg/L	N/A	527 µg/L	N/A	5	Vessel disposal operations
Lead	350 µg/L	N/A	174.2 µg/L	N/A	5	Vessel disposal operations, past practices*
Mercury	Not detected	N/A	Not detected	N/A	5	
Nickel	1500 µg/L	N/A	446.8 µg/L	N/A	5	Vessel disposal operations
Zinc	880 µg/L	N/A	450 µg/L	N/A	5	Vessel disposal operations

* In the past, raw lead used for ballast and shielding was stored outdoors, exposed to storm water

Part C - List each pollutant shown in Tables 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		

Part D - Provide data for the storm events which resulted in the maximum values for the flow weighted composite sample.

Note: Flow weighted composite samples were not required by the Shipyards NPDES permit. Specific rainfall event information is available if requested.

4/12/02 Replacement

VII. Discharge Information (Continued from page 3 of Form 2F) for Outfall 028

Part A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Oil and Grease	N/A	N/A	N/A	N/A	N/A	
TPH	3.5 mg/L	N/A	1.7 mg/L	N/A	3	Vehicles and equipment
Biological Oxygen Demand (BOD5)	Not detected	N/A	Not detected	N/A	2	Organic matter
Chemical Oxygen Demand (COD)	390 mg/L	N/A	156 mg/L	N/A	3	Organic matter
Total Suspended Solids (TSS)	130 mg/L	N/A	59.7 mg/L	N/A	3	Suspended matter in *surface* runoff
Total Kjeldahl Nitrogen	N/A	N/A	N/A	N/A	[A]	
Nitrate plus Nitrite Nitrogen	N/A	N/A	N/A	N/A	[A]	
Total Phosphorus	N/A	N/A	N/A	N/A	[A]	[B]
	Minimum		Maximum			
pH	7.5	N/A	7.7	N/A	3	

[A] Under the current NPDES permit, the Shipyard is considered an industrial facility and sampling for these parameters was not required. Per a telephone communication between Dave Ragsdale, EPA Region X, and Matt Jabloner, Water Program Manager, Puget Sound Naval Shipyard, dated 19 Nov 97, three years of sampling under the current NPDES permit has sufficiently characterized the Shipyard storm water discharges. Mr. Ragsdale concurred that limited additional sampling for purposes of this application would not add to the knowledge base about the quality of those discharges and storm water sampling results obtained during the current permit would be sufficient for purposes of this application.

[B] Sources of this pollutant (detergents, boiler waters, fertilizers, body wastes, food residues) are not discharged into this outfall.

Part B - List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Arsenic	12 µg/L	N/A	7.65 µg/L	N/A	2	Treated wood, vessel disposal operations
Cadmium	1.9 µg/L	N/A	*1.0* µg/L	N/A	2	Paint
Chromium	47 µg/L	N/A	33.5 µg/L	N/A	2	Vessel disposal operations
Copper	420 µg/L	N/A	290 µg/L	N/A	2	Vessel disposal operations
Lead	240 µg/L	N/A	149 µg/L	N/A	2	Vessel disposal operations, past practices[A]
Mercury	0.39 µg/L	N/A	*0.2* µg/L	N/A	2	Past practices[B]
Nickel	160 µg/L	N/A	102 µg/L	N/A	2	Vessel disposal operations
Zinc	610 µg/L	N/A	440 µg/L	N/A	2	Galvanized buildings, vessel disposal operations
PCB-1260	4.7 µg/L	N/A	1.6 µg/L	N/A	3	Vessel disposal operations
Di-n-butylphthalate	14 µg/L	N/A	7.4 µg/L	N/A	3	Analyte was also found in method blank during one analysis
Bis (2-ethylhexyl) phthalate	1,738 µg/L	N/A	588.3 µg/L	N/A	3	Liquid used in vacuum pumps

[A] In the past, raw lead used for ballast and shielding was stored outdoors, exposed to storm water.

[B] Mercury has been identified under the floor of Building 431. It may be entering the outfall through ground water infilteration.

4/12/02 Replacement

Part C - List each pollutant shown in Tables 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		

Part D - Provide data for the storm events which resulted in the maximum values for the flow weighted composite sample.

Note: Flow weighted composite samples were not required by the Shipyards NPDES permit. Specific rainfall event information is available if requested.

4/12/02 Replacement

VII. Discharge Information (Continued from page 3 of Form 2F) for Outfall 030

Part A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Oil and Grease	N/A	N/A	N/A	N/A	[A]	
Biological Oxygen Demand (BOD5)	N/A	N/A	N/A	N/A	[A]	
Chemical Oxygen Demand (COD)	N/A	N/A	N/A	N/A	[A]	
Total Suspended Solids (TSS)	*N/A*	*N/A*	*N/A*	*N/A*	[A]	
Total Kjeldahl Nitrogen	N/A	N/A	N/A	N/A	[A]	
Nitrate plus Nitrite Nitrogen	N/A	N/A	N/A	N/A	[A]	
Total Phosphorus	N/A	N/A	N/A	N/A	[A]	[B]
pH	Minimum	Maximum	Minimum	Maximum	[A]	

[A] Under the current NPDES permit, the Shipyard is considered an industrial facility and sampling for these parameters was not required. Per a telephone communication between Dave Ragsdale, EPA Region X, and Matt Jabloner, Water Program Manager, Puget Sound Naval Shipyard, dated 19 Nov 97, three years of sampling under the current NPDES permit has sufficiently characterized the Shipyard storm water discharges. Mr. Ragsdale concurred that limited additional sampling for purposes of this application would not add to the knowledge base about the quality of those discharges and storm water sampling results obtained during the current permit would be sufficient for purposes of this application.

[B] Sources of this pollutant (detergents, boiler waters, fertilizers, body wastes, food residues) are not discharged into this outfall.

Part B - List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Arsenic	140 µg/L	N/A	*58.5 µg/L*	N/A	4	Treated wood, vessel disposal operations
Cadmium	*6.2 µg/L*	N/A	*3.7 µg/L*	N/A	4	Paint
Chromium	87 µg/L	N/A	*46 µg/L*	N/A	4	Treated wood, plating *additive*
Copper	*660 µg/L*	N/A	*343 µg/L*	N/A	4	Treated wood, electroplating
Lead	*1200 µg/L*	N/A	*473 µg/L*	N/A	4	Past practices (old battery shop)
Mercury	0.8 µg/L	N/A	0.15 µg/L	N/A	4	Past practices
Nickel	*53 µg/L*	N/A	*36 µg/L*	N/A	4	Electroplating
Zinc	*2800 µg/L*	N/A	*1832 µg/L*	N/A	4	Treated wood, zinc plating operations
Cyanide	Not detected	N/A	Not detected	N/A	4	

Part C - List each pollutant shown in Tables 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		

Part D - Provide data for the storm events which resulted in the maximum values for the flow weighted composite sample.

Note: Flow weighted composite samples were not required by the Shipyards NPDES permit. Specific rainfall event information is available if requested.

4/12/02 Replacement

VII. Discharge Information (Continued from page 3 of Form 2F) for Outfall 040

Part A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Oil and Grease	N/A	N/A	N/A	N/A	N/A	
TPH	26 mg/L	N/A	7.2 mg/L	N/A	4	Vehicles and equipment
Biological Oxygen Demand (BOD5)	13 mg/L	N/A	4.3 mg/L	N/A	3	Organic matter
Chemical Oxygen Demand (COD)	86 mg/L	N/A	25.5 mg/L	N/A	4	Organic matter
Total Suspended Solids (TSS)	210 mg/L	N/A	*113* mg/L	N/A	4	Suspended matter in surface runoff
Total Kjeldahl Nitrogen	N/A	N/A	N/A	N/A	[A]	
Nitrate plus Nitrite Nitrogen	N/A	N/A	N/A	N/A	[A]	
Total Phosphorus	N/A	N/A	N/A	N/A	[A]	[B]
	Minimum		Maximum			
pH	7.3	N/A	7.7	N/A	4	

[A] Under the current NPDES permit, the Shipyard is considered an industrial facility and sampling for these parameters was not required. Per a telephone communication between Dave Ragsdale, EPA Region X, and Matt Jabloner, Water Program Manager, Puget Sound Naval Shipyard, dated 19 Nov 97, three years of sampling under the current NPDES permit has sufficiently characterized the Shipyard storm water discharges. Mr. Ragsdale concurred that limited additional sampling for purposes of this application would not add to the knowledge base about the quality of those discharges and storm water sampling results obtained during the current permit would be sufficient for purposes of this application.

[B] Sources of this pollutant (detergents, boiler waters, fertilizers, body wastes, food residues) are not discharged into this outfall.

Part B - List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Arsenic	*4.2 µg/L*	N/A	*1.6 µg/L*	N/A	4	Past practices* and surface runoff
Cadmium	*2.6 µg/L*	N/A	*1.0 µg/L*	N/A	4	Past practices* and surface runoff
Chromium	*23 µg/L*	N/A	*9.3 µg/L*	N/A	4	Past practices* and surface runoff
Copper	*210 µg/*	N/A	*101 µg/L*	N/A	4	Past practices* and surface runoff
Lead	*88 µg/L*	N/A	*49 µg/L*	N/A	4	Past practices* and surface runoff
Mercury	*0.2 µg/L*	N/A	*0.05 µg/L*	N/A	4	Past practices* and surface runoff
Nickel	*46 µg/L*	N/A	*28 µg/L*	N/A	4	Past practices* and surface runoff
Zinc	*830 µg/L*	N/A	*678 µg/L*	N/A	4	Past practices* and surface runoff

* This outfall drains an area of Installation Restoration Site 10 west. Some of the pollutants in this outfall may have migrated from fill materials surrounding this storm sewer system.

Part C - List each pollutant shown in Tables 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		

* This outfall drains an area of Installation Restoration Site 10 west. Some of the pollutants in this outfall may have migrated from fill materials surrounding this storm sewer system.

Part D - Provide data for the storm events which resulted in the maximum values for the flow weighted composite sample.

Note: Flow weighted composite samples were not required by the Shipyards NPDES permit. Specific rainfall event information is available if requested.

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VII. Discharge Information (Continued from page 3 of Form 2F) for Outfall 052

Part A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Oil and Grease	N/A	N/A	N/A	N/A	N/A	
TPH	1.7 mg/L	N/A	1.13 mg/L	N/A	3	Vehicles and equipment
Biological Oxygen Demand (BOD5)	17 mg/L	N/A	8.5 mg/L	N/A	2	Biochemical degradation of organic matter
Chemical Oxygen Demand (COD)	38 mg/L	N/A	28.3 mg/L	N/A	3	Organic matter susceptible to oxidation by a strong chemical oxidant
Total Suspended Solids (TSS)	44 mg/L	N/A	20.1 mg/L	N/A	4	Suspended matter in urface runoff
Total Kjeldahl Nitrogen	N/A	N/A	N/A	N/A	[A]	Organic nitrogen and ammonia
Nitrate plus Nitrite Nitrogen	N/A	N/A	N/A	N/A	[A]	Total oxidized nitrogen
Total Phosphorus	N/A	N/A	N/A	N/A	[A]	[B]
	Minimum		Maximum			
pH	7.4	N/A	7.8	N/A	3	

[A] Under the current NPDES permit, the Shipyard is considered an industrial facility and sampling for these parameters was not required. Per a telephone communication between Dave Ragsdale, EPA Region X, and Matt Jabloner, Water Program Manager, Puget Sound Naval Shipyard, dated 19 Nov 97, three years of sampling under the current NPDES permit has sufficiently characterized the Shipyard storm water discharges. Mr. Ragsdale concurred that limited additional sampling for purposes of this application would not add to the knowledge base about the quality of those discharges and storm water sampling results obtained during the current permit would be sufficient for purposes of this application.

[B] Sources of this pollutant (detergents, boiler waters, fertilizers, body wastes, food residues) are not discharged into this outfall.

Part B - List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Arsenic	1.5 µg/L	N/A	0.38 µg/L	N/A	4	Treated wood
Cadmium	Not detected	N/A	Not detected	N/A	4	
Chromium	Not detected	N/A	Not detected	N/A	4	
Copper	110 µg/L	N/A	77.8 µg/L	N/A	4	Surface runoff
Lead	30 µg/L	N/A	14.7 µg/L	N/A	4	Surface runoff
Mercury	Not detected	N/A	Not detected	N/A	4	
Nickel	24 µg/L	N/A	11.9 µg/L	N/A	4	Surface runoff
Zinc	180 µg/L	N/A	123 µg/L	N/A	4	Surface runoff
Di-n-butylphthalate	13 µg/L	N/A	6.84 µg/L	N/A	3	Analyte found during two sampling events. Also found in blank during analysis of one event.
Bis (2-ethylhexyl) phthalate	13 µg/L	N/A	4.3 µg/L	N/A	3	Surface runoff

Part C - List each pollutant shown in Tables 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Chlorine		N/A		N/A		

Part D - Provide data for the storm events which resulted in the maximum values for the flow weighted composite sample.
Note: Flow weighted composite samples were not required by the Shipyards NPDES permit. Specific rainfall event information is available if requested.

SUPPLEMENT 1
REQUEST FOR REDUCED MONITORING
NPDES PERMIT RENEWAL APPLICATION
Puget Sound Naval Shipyard

Reference: (a) Interim Guidance For Performance-Based Reduction Of NPDES Permit Monitoring Frequencies. EPA 833/B-96-001, April 1996.

Puget Sound Naval Shipyard requests EPA apply the recommendations of reference (a) when developing the Shipyard's NPDES permit. Reference (a) was developed as part of the President's Regulatory Reinvention Initiative to reduce reporting and monitoring for those facilities that have a record of good compliance and pollutant discharges at levels below permit requirements. Reduced monitoring is determined based on the ratio of Long Term Effluent Average to Monthly Average Limit as presented in the Table 1.

Table 1

Baseline Monitoring	Ratio of Long Term Effluent Average to Monthly Average Limit			
	75-66%	65-50%	49-25%	<25%
7/week	5/week	4/week	3/week	1/week
6/week	4/week	3/week	2/week	1/week
5/week	4/week	3/week	2/week	1/week
4/week	3/week	2/week	1/week	1/week
3/week	3/week	2/week	1/week	1/week
2/week	2/week	1/week	2/month	1/month
1/week	1/week	1/week	2/month	1/2months
2/month	2/month	2/month	2/month	1/quarter
1/month	1/month	1/month	1/quarter	1/6months

Using two years of NPDES sample results and the guidance in Table 1, Puget Sound Naval Shipyard requests EPA apply the reduced monitoring frequencies in Table 2. Using outfall 021A TSS as an example: Dividing the long-term average TSS value of 2.74 mg/l (see Table 4) by the monthly average limit of 30 mg/l equals 0.091 or 9%. The current TSS monitoring frequency is 3 days per week. Using Table 1 and reading across from a Baseline Monitoring of 3/week to the last column (<25%) shows a new monitoring frequency of 1/week (one sample collected per week).

Table 2

Outfall	Parameter	Current Monitoring Frequency	Requested Monitoring Frequency
018A, 018B, and 096A	Oil and Grease	Weekly	1/2months
	Temperature	Monthly	1/6months
019A	Oil and Grease	Weekly	1/2months
	Temperature	Monthly	1/6months
021A	Temperature	Daily	5/week
	Oil and Grease	Daily	1/week
	TSS	3/week	1/week

During the years 1996 and 1997, no Oil and Grease violations occurred at Outfalls 018A, 018B, 096A , 019A, or 021A. Therefore the ratio of long-term average to monthly average limit is <25%. There were

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no temperature violations from Outfall 021A during the evaluation period. The long-term average of TSS recorded in discharges from Outfall 021A was <25% of the monthly average limit allowed by the Shipyard's NPDES permit. Monitoring results are included below.

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Table 3

Month	Outfall [Temperature (°F)]						
	018A	018B	096A	Average	019A	021A avg.	021A max
Jan-96	51.8			51.8	52.2	50	52
Feb-96		41.8		41.8	39.2	48	52
Mar-96	55.6			55.6	54.2	49	52
Apr-96		56.0		56.0	54.0	54	55
May-96	57.0			57.0	57.0	56	59
Jun-96		54.1		54.1	55.0	58	60
Jul-96	56.4			56.4	57.4	61	68
Aug-96		57.9		57.9	59.4	62	67
Sep-96	57.0		58.3	57.7	54.9	63	65
Oct-96		56.5	57.0	56.8	57.0	60	63
Nov-96	54.0		56.0	55.0	54.0	53	57
Dec-96		52.0		52.0	52.0	50	55
Jan-97	52.5			52.5	52.7	53	60
Feb-97		53.6		53.6	53.0	55	59
Mar-97		52.5		52.5	54.0	56	60
Apr-97		51.8	53.1	52.45	52.9	56	64
May-97		52.0		52.0	53.0	55	64
Jun-97		56.1		56.1	53.8	56	58
Jul-97		57.4		57.4	53.8	61	64
Aug-97		57.4		57.4	57.4	66	73
Sep-97		57.0		57.0	54.0	69	77
Oct-97	55.4			55.4	54.3	61	65
Nov-97	54.7			54.7	59.5	56	60
Dec-97	54.1			54.1	53.6	54	55
Average				**54.5**	**54.1**	**53.8(W) 59.8(S)**	**61.0**
Prmt limit				—	—	**70(winter) 75(summer)**	**90**
std dev				**3.37**	**3.81**	**3.96(W) 4.51(S)**	**6.40**
CV[1]				**6.2%**	**7.0%**	**7.4%(W) 6.0%(S)**	**10.0%**
Ratio[2]				**See footnote 3**	**Note 3**	**77%(W)[4] 80%(S)**	**68%**

+ As demonstrated by the CV the temperature variation for these outfall is very small. While there is no permit limit for temperature the Shipyard requests the monitoring frequencies be changed to once every six months.

[1] Coefficient of Variation (ratio of standard deviation to average)

[2] Ratio of Long Term Effluent Average to Monthly Average Limit ((Long-term Average/Limit)X100)

[3] As demonstrated by the CV the temperature variation for these outfalls is very small. While there is no permit limit for temperature the Shipyard requests the monitoring frequencies be changed to once every quarter.

[4] The requested monitoring frequency in Table 2 does not quite fall within the guideline of reference (a). The coefficient of variation, however, is so low that the Shipyard proposes the requested monitoring frequency is reasonable.

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NPDES Oil & Grease results for outfalls 018A, 018B, 096A, 019A and 021A from 1/3/96 to 2/25/98 (1/1/96 to 12/31/97 for outfall 021A) were evaluated for this report. All results were less than the laboratory Detection Limit and therefore, for sake of brevity, the data is not herein presented. The ratio of long-term average to monthly average limit is <25%.

Table 4

Outfall 021A	
Date	TSS (mg/l)
1/1/96	4
1/3/96	0
1/5/96	0
1/8/96	0
1/10/96	0
1/12/96	0
1/15/96	0
1/17/96	12
1/19/96	4.7
1/22/96	5.6
1/24/96	6.3
1/26/96	4.6
1/29/96	4.9
1/31/96	6
2/2/96	4.4
2/5/96	4.2
2/7/96	6
2/9/96	7.2
2/12/96	7.2
2/14/96	5
2/16/96	4.6
2/19/96	0
2/21/96	5.1
2/23/96	0
2/26/96	0
2/28/96	6
3/1/96	0
3/4/96	5.3
3/6/96	4.2
3/8/96	8.4
3/11/96	4.9
3/13/96	0
3/15/96	0
3/18/96	0
3/20/96	0
3/22/96	0
3/25/96	0
3/27/96	0
3/29/96	0
4/1/96	0
4/3/96	4
4/5/96	0
4/8/96	0
4/10/96	0
4/12/96	0
4/15/96	0
4/17/96	8.4
4/19/96	4.3
4/22/96	0
4/24/96	0
4/26/96	0
4/29/96	0
5/1/96	0
5/3/96	0
5/6/96	0
5/8/96	0
5/10/96	230
5/13/96	13
5/15/96	12
5/17/96	7
5/20/96	5.6
5/22/96	4.4
5/24/96	0
5/27/96	6.3
5/29/96	5
5/31/96	4.7
6/3/96	0
6/5/96	0
6/7/96	16
6/10/96	9.7
6/12/96	6.2
6/15/96	6.3
6/17/96	6.9
6/19/96	4.6
6/21/96	4.4
6/24/96	0
6/26/96	4.7
6/29/96	4.2
7/1/96	0
7/3/96	0
7/5/96	0
7/9/96	0
7/10/96	0
7/12/96	0
7/15/96	5.2
7/17/96	0
7/19/96	0
7/22/96	0
7/24/96	0
7/26/96	9.1
7/29/96	5.7
7/31/96	0
8/2/96	0
8/5/96	6.8
8/7/96	0
8/9/96	16
8/12/96	16
8/14/96	5.5
8/16/96	0
8/19/96	0
8/21/96	4.5
8/23/96	0
8/26/96	0
8/28/96	4.3
8/30/96	29
9/2/96	0
9/4/96	0
9/6/96	0
9/9/96	0
9/11/96	0
9/13/96	0
9/18/96	0
9/20/96	0
9/23/96	0
9/25/96	0
9/27/96	0
9/30/96	0
10/2/96	0
10/4/96	0
10/7/96	0
10/9/96	0
10/12/96	5.2
10/14/96	0
10/16/96	4.2
10/18/96	0
10/21/96	0
10/23/96	0
10/25/96	0
10/28/96	4.6
10/30/96	0
11/1/96	0
11/4/96	0
11/6/96	0
11/8/96	0
11/11/96	0
11/13/96	0
11/15/96	4.9
11/18/96	0
11/20/96	0
11/22/96	0
11/25/96	0
11/27/96	4.2
11/29/96	6.6
12/2/96	4.9
12/4/96	0
12/6/96	0
12/9/96	0
12/13/96	4
12/16/96	0
12/18/96	0
12/20/96	0
12/23/96	0
12/25/96	0
12/27/96	0
12/31/96	0
1/1/97	0
1/3/97	0
1/6/97	0
1/8/97	0
1/10/97	0
1/13/97	0
1/15/97	0
1/17/97	0
1/20/97	0
1/24/97	0
1/27/97	0
1/29/97	0
1/31/97	0
2/3/97	5.2
2/5/97	0
2/7/97	0
2/10/97	0
2/12/97	0
2/14/97	0
2/17/97	4.1
2/19/97	4
2/21/97	0
2/24/97	0
2/26/97	0
2/28/97	0
3/3/97	0
3/5/97	0
3/7/97	0
3/10/97	0
3/12/97	0
3/17/97	0
3/19/97	0
3/21/97	5.7
3/24/97	0
3/26/97	0
3/28/97	0
3/31/97	4.4
4/2/97	4
4/4/97	5.9
4/7/97	5.3
4/9/97	0
4/11/97	0
4/14/97	0
4/16/97	4.6
4/18/97	0
4/21/97	6.5
4/23/97	0
4/25/97	0
4/28/97	5.3
4/30/97	0
5/2/97	0
5/5/97	0
5/7/97	0
5/9/97	0
5/12/97	0
5/14/97	0
5/16/97	0
5/19/97	9
5/21/97	0
5/23/97	0
5/26/97	0
5/28/97	0
5/30/97	0
6/2/97	0
6/4/97	0
6/6/97	0
6/9/97	0
6/11/97	0
6/13/97	4.6
6/16/97	0
6/18/97	6.6
6/20/97	0
6/23/97	0
6/25/97	0
6/27/97	0
6/30/97	0
7/9/97	0
7/11/97	0
7/14/97	7.7
7/16/97	0
7/18/97	0
7/21/97	0
7/23/97	0
7/25/97	0
7/28/97	0
7/30/97	0
8/1/97	4.1
8/4/97	4.5
8/6/97	0
8/8/97	0
8/11/97	0
8/13/97	0
8/15/97	0
8/18/97	0
8/20/97	0
8/22/97	0
8/25/97	5.9
8/27/97	0
8/29/97	0
9/1/97	0
9/3/97	0
9/5/97	0
9/8/97	0
9/10/97	0
9/12/97	0

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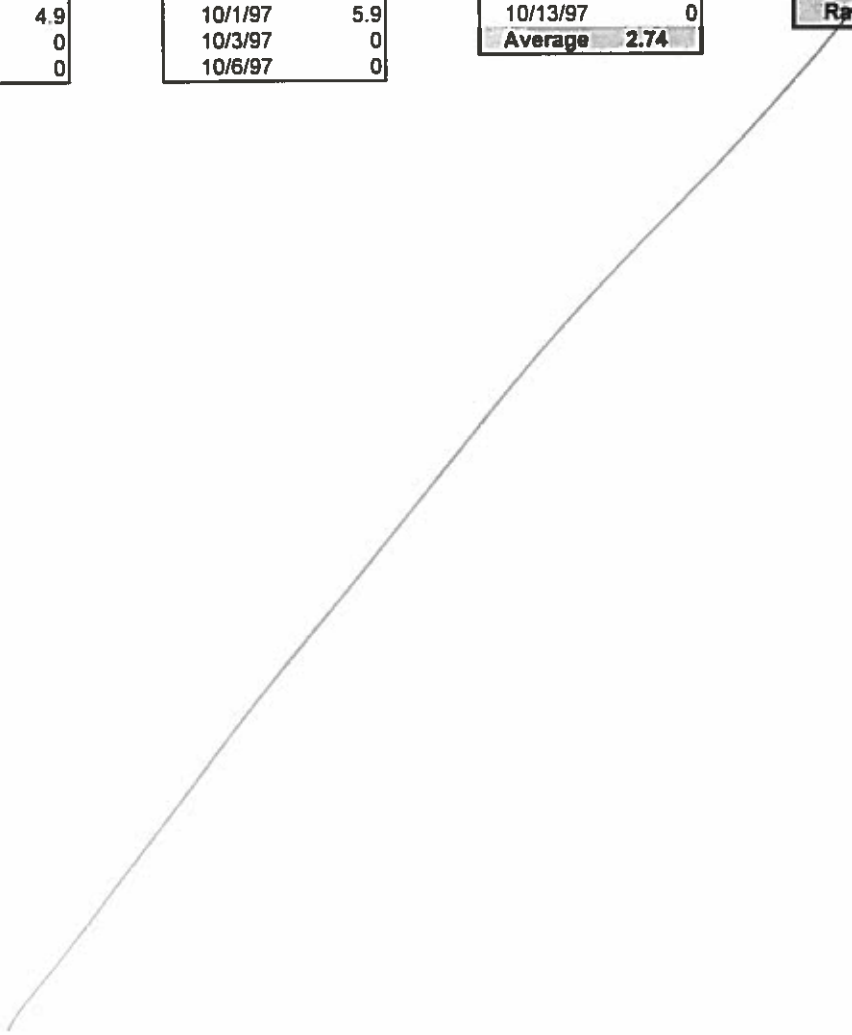
9/15/97	0
9/17/97	6.3
9/19/97	4.9
9/22/97	0
9/24/97	0

9/26/97	0
9/29/97	4.8
10/1/97	5.9
10/3/97	0
10/6/97	0

10/8/97	0
10/10/97	0
10/13/97	0
Average	**2.74**

Permit limit	**30 mg/L**
Ratio	**9.1%**



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SUPPLEMENT 1
REQUEST FOR REDUCED MONITORING
NPDES PERMIT RENEWAL APPLICATION
Puget Sound Naval Shipyard

Reference:(a) Interim Guidance For Performance-Based Reduction Of NPDES Permit Monitoring Frequencies. EPA 833/B-96-001, April 1996.

Puget Sound Naval Shipyard requests EPA apply the recommendations of reference (a) when developing the Shipyard's NPDES permit. Reference (a) was developed as part of the President's Regulatory Reinvention Initiative to reduce reporting and monitoring for those facilities that have a record of good compliance and pollutant discharges at levels below permit requirements. Reduced monitoring is determined based on the ratio of Long Term Effluent Average to Monthly Average Limit as presented in the table below.

Table 1

Baseline Monitoring	Ratio of Long Term Effluent Average to Monthly Average Limit			
	75-66%	65-50%	49-25%	<25%
7/week	5/week	4/week	3/week	1/week
6/week	4/week	3/week	2/week	1/week
5/week	4/week	3/week	2/week	1/week
4/week	3/week	2/week	1/week	1/week
3/week	3/week	2/week	1/week	1/week
2/week	2/week	1/week	2/month	1/month
1/week	1/week	1/week	2/month	1/2 months
2/month	2/month	2/month	2/month	1/quarter
1/month	1/month	1/month	1/quarter	1/6 months

In addition to the reductions in monitoring based on the ratio of the average to the monthly limit, reference (a) allows additional reductions in monitoring if the permittee agrees to collect or provide additional ambient monitoring information. The Shipyard is currently working with EPA on an Environmental Investment (ENVVEST) Project titled, "Integrated Marine Environmental Compliance Program". One of the stated goals of this project is to collect ambient data for the purpose of developing TMDLs for Sinclair Inlet. Based on the Shipyards good compliance performance and its participation in ENNVEST, Puget Sound Naval Shipyard requests EPA apply the reduced monitoring frequencies in the table below.

Table 2

Outfall	Parameter	Current Monitoring Frequency	*Monitoring Frequency based on Table 1*	Requested Monitoring Frequency
018A, 018B, and 096A	Oil and Grease	Weekly	*1/2 months*	*Not Required*
	Temperature	Monthly		*1/3* months
019A	Oil and Grease	Weekly	*1/2 months*	*Not Required*
	Temperature	Monthly		*1/3* months
021A	Temperature	Daily	*5/week*	5/week
	Oil and Grease	Daily	*1/week*	*Not Required*
	TSS	3/week	*1/week*	*1/month*

During the years 1996 and 1997, no Oil and Grease violations occurred at Outfalls 018A, 018B, 096A, 019A, or 021A. There were no temperature violations from Outfall 021A during the evaluation period. The long-term average of TSS recorded in discharges form Outfall 021A was <25% of the monthly average limit allowed by the Shipyard's NPDES permit. Monitoring results are included below:

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Table 3

Month	Outfall Temperature (°F)						
	018A	018B	096	Average	019	021 avg.	021 max
Jan-96	51.8			51.8	52.2	50	52
Feb-96		41.8		41.8	39.2	48	52
Mar-96	55.6			55.6	54.2	49	52
Apr-96		56.0		56.0	54.0	54	55
May-96	57.0			57.0	57.0	56	59
Jun-96		54.1		54.1	55.0	58	60
Jul-96	56.4			56.4	57.4	61	68
Aug-96		57.9		57.9	59.4	62	67
Sep-96	57.0		58.3	57.7	54.9	63	65
Oct-96		56.5	57.0	56.8	57.0	60	63
Nov-96	54.0		56.0	55.0	54.0	53	57
Dec-96		52.0		52.0	52.0	50	55
Jan-97	52.5			52.5	52.7	53	60
Feb-97		53.6		53.6	53.0	55	59
Mar-97		52.5		52.5	54.0	56	60
Apr-97		51.8	53.1	52.45	52.9	56	64
May-97		52.0		52.0	53.0	55	64
Jun-97		56.1		56.1	53.8	56	58
Jul-97		57.4		57.4	53.8	61	64
Aug-97		57.4		57.4	57.4	66	73
Sep-97		57.0		57.0	54.0	69	77
Oct-97	55.4			55.4	54.3	61	65
Nov-97	54.7			54.7	59.5	56	60
Dec-97	54.1			54.1	53.6	54	55
Average				**54.5**	**54.1**	**53.8(W) 59.8(S)**	**61.0**
Prmt limit				**--**	**--**	**70 (winter) 75 (summer)**	**90**
std dev				**3.37**	**3.81**	**3.96(W) 4.51(S)**	**6.40**
CV[1]				**6.2%**	**7.0%**	**7.4%(W) 6.0%(S)**	**10.0%**
RATIO[2]				**See footnote 3**	**Note 3**	**77%(W) 80%(S)**	**68%**

[1] Coefficient of Variation (ratio of standard deviation to average)
[2] Ratio of Long Term Effluent Average to Monthly Average Limit ((Long-term Average/Limit)X100)
[3] As demonstrated by the CV the temperature variation for these outfalls is very small. While there is no permit limit for temperature the Shipyard requests the monitoring frequencies be changed to once every quarter.

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Table 4

Outfall 021	
Date	TSS (mg/l)
1/1/96	4
1/3/96	0
1/5/96	0
1/8/96	0
1/10/96	0
1/12/96	0
1/15/96	0
1/17/96	12
1/19/96	4.7
1/22/96	5.6
1/24/96	6.3
1/26/96	4.6
1/29/96	4.9
1/31/96	6
2/2/96	4.4
2/5/96	4.2
2/7/96	6
2/9/96	7.2
2/12/96	7.2
2/14/96	5
2/16/96	4.6
2/19/96	0
2/21/96	5.1
2/23/96	0
2/26/96	0
2/28/96	6
3/1/96	0
3/4/96	5.3
3/6/96	4.2
3/8/96	8.4
3/11/96	4.9
3/13/96	0
3/15/96	0
3/18/96	0
3/20/96	0
3/22/96	0
3/25/96	0
3/27/96	0
3/29/96	0
4/1/96	0
4/3/96	4
4/5/96	0
4/8/96	0
4/10/96	0
4/12/96	0
4/15/96	0
4/17/96	8.4
4/19/96	4.3
4/22/96	0
4/24/96	0
4/26/96	0
4/29/96	0
5/1/96	0
5/3/96	0
5/6/96	0
5/8/96	0
5/10/96	230
5/13/96	13
5/15/96	12
5/17/96	7
5/20/96	5.6
5/22/96	4.4
5/24/96	0
5/27/96	6.3
5/29/96	5
5/31/96	4.7
6/3/96	0
6/5/96	0
6/7/96	16
6/10/96	9.7
6/12/96	6.2
6/15/96	6.3
6/17/96	6.9
6/19/96	4.6
6/21/96	4.4
6/24/96	0
6/26/96	4.7
6/29/96	4.2
7/1/96	0
7/3/96	0
7/5/96	0
7/9/96	0
7/10/96	0
7/12/96	0
7/15/96	5.2
7/17/96	0
7/19/96	0
7/22/96	0
7/24/96	0
7/26/96	9.1
7/29/96	5.7
7/31/96	0
8/2/96	0
8/5/96	6.8
8/7/96	0
8/9/96	16
8/12/96	16
8/14/96	5.5
8/16/96	0
8/19/96	0
8/21/96	4.5
8/23/96	0
8/26/96	0
8/28/96	4.3
8/30/96	29
9/2/96	0
9/4/96	0
9/6/96	0
9/9/96	0
9/11/96	0
9/13/96	0
9/18/96	0
9/20/96	0
9/23/96	0
9/25/96	0
9/27/96	0
9/30/96	0
10/2/96	0
10/4/96	0
10/7/96	0
10/9/96	0
10/12/96	5.2
10/14/96	0
10/16/96	4.2
10/18/96	0
10/21/96	0
10/23/96	0
10/25/96	0
10/28/96	4.6
10/30/96	0
11/1/96	0
11/4/96	0
11/6/96	0
11/8/96	0
11/11/96	0
11/13/96	0
11/15/96	4.9
11/18/96	0
11/20/96	0
11/22/96	0
11/25/96	0
11/27/96	4.2
11/29/96	6.6
12/2/96	4.9
12/4/96	0
12/6/96	0
12/9/96	0
12/13/96	4
12/16/96	0
12/18/96	0
12/20/96	0
12/23/96	0
12/25/96	0
12/27/96	0
12/31/96	0
1/1/97	0
1/3/97	0
1/6/97	0
1/8/97	0
1/10/97	0
1/13/97	0
1/15/97	0
1/17/97	0
1/20/97	0
1/24/97	0
1/27/97	0
1/29/97	0
1/31/97	0
2/3/97	5.2
2/5/97	0
2/7/97	0
2/10/97	0
2/12/97	0
2/14/97	0
2/17/97	4.1
2/19/97	4
2/21/97	0
2/24/97	0
2/26/97	0
2/28/97	0
3/3/97	0
3/5/97	0
3/7/97	0
3/10/97	0
3/12/97	0
3/17/97	0
3/19/97	0
3/21/97	5.7
3/24/97	0
3/26/97	0
3/28/97	0
3/31/97	4.4
4/2/97	4
4/4/97	5.9
4/7/97	5.3
4/9/97	0
4/11/97	0
4/14/97	0
4/16/97	4.6
4/18/97	0
4/21/97	6.5
4/23/97	0
4/25/97	0
4/28/97	5.3
4/30/97	0

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5/2/97	0	6/13/97	4.6	8/1/97	4.1	9/12/97	0
5/5/97	0	6/16/97	0	8/4/97	4.5	9/15/97	0
5/7/97	0	6/18/97	6.6	8/6/97	0	9/17/97	6.3
5/9/97	0	6/20/97	0	8/8/97	0	9/19/97	4.9
5/12/97	0	6/23/97	0	8/11/97	0	9/22/97	0
5/14/97	0	6/25/97	0	8/13/97	0	9/24/97	0
5/16/97	0	6/27/97	0	8/15/97	0	9/26/97	0
5/19/97	9	6/30/97	0	8/18/97	0	9/29/97	4.8
5/21/97	0	7/9/97	0	8/20/97	0	10/1/97	5.9
5/23/97	0	7/11/97	0	8/22/97	0	10/3/97	0
5/26/97	0	7/14/97	7.7	8/25/97	5.9	10/6/97	0
5/28/97	0	7/16/97	0	8/27/97	0	10/8/97	0
5/30/97	0	7/18/97	0	8/29/97	0	10/10/97	0
6/2/97	0	7/21/97	0	9/1/97	0	10/13/97	0
6/4/97	0	7/23/97	0	9/3/97	0		
6/6/97	0	7/25/97	0	9/5/97	0		
6/9/97	0	7/28/97	0	9/8/97	0		
6/11/97	0	7/30/97	0	9/10/97	0		

Average	2.74
Permit limit	30 mg/L
Ratio	9.1%

NPDES Oil & Grease results for outfalls 018A, 018B, 096, 019 and 021 from 1/3/96 to 2/25/98 (1/1/96 to 12/31/97 for outfall 021) were evaluated for this report. All results were less than the laboratory Detection Limit and therefore, for sake of brevity, the data is not herein presented.

4/12/02 Replacement

SUPPLEMENT 2
NPDES Copper Limits
NPDES PERMIT RENEWAL APPLICATION
Puget Sound Naval Shipyard

Summary. Current NPDES total recoverable copper limits for outfalls 018A, 018B, 096A, and 019A need to be reevaluated due to additional information that was not previously available and substantial alterations affecting the discharge.

The Shipyard proposes quarterly chronic WET testing at outfall 019A and deletion of total recoverable copper limits for all dry dock outfalls.

Background. Outfalls 018A, 018B, 096A, and 019A discharge water associated with the operation of the six Shipyard dry docks. From a quantity standpoint the two primary discharges from these outfalls are groundwater (hydrostatic relief) and non-contact cooling water. Surface water primarily and potable water are used for non-contact cooling water for vessels and equipment in dry dock. Other sources of water that comprise the discharge include storm water, steam condensate, and surface water. Storm water runoff from the dry-dock floor has the largest impact on outfall metals concentration. The NPDES permit limits total recoverable copper as the overriding water quality constituent of concern.

Additional Information that was Not Previously Available. Whole Effluent Toxicity (WET) testing revealed that changes in effluent copper concentrations are independent of marine toxicity. Acute toxicity was not observed. Limited chronic toxicity was observed at outfall 019A.

The current permit imposed a "monitor only" provision to complete WET testing on a quarterly basis for one year for the dry dock outfalls. The required WET monitoring ended in the spring of 1995. The Shipyard completed the required monitoring and also did some additional monitoring to get a more statistically significant WET data set. The WET samples were also analyzed for copper and zinc. Evaluation of WET results revealed:

- Acute toxicity was not observed in any test in any outfall.
- Total recoverable copper and zinc levels do not affect outfall acute toxicity. There is no statistical relationship between total recoverable copper or zinc and acute toxicity. Total recoverable copper levels varied from <10 ug/l to 550 ug/l. Total recoverable zinc levels varied from <20 ug/l to 320 ug/l.
- There is no positive correlation between chronic toxicity and copper or zinc levels.
- Chronic toxicity was observed in four of the 26 tests. Three of the four observed impacts were in samples from outfall 019A. However, there was no evidence that an increase in copper or zinc correlated to an increase in chronic toxicity.

Substantial Alterations Affecting the Discharge. New paint removal techniques along with implementation of BMPs are minimizing pollutant discharges. Shipyard paint removal operations have substantially changed within the last five years and are continuing to change. Historically the primary paint removal method was by use of dry abrasive blasting. Paint removal using high and ultra-high pressure water are now common place. The Shipyard believes these changes have reduced dry dock pollutant loadings. While environmental controls on dry abrasive blasting are significant (containment, filters) wet methods provide a greater level of environmental control. Two methods of collecting the high-pressure wastewater are employed. The ultra high-pressure units have integral wastewater recovery and treatment systems. Once treated the water is reused. For those systems without integral wastewater recovery capability, secondary containment is constructed or the new Storm Water Collection Systems (also called Process Water Collection Systems, see Supplement 3) are used.

During normal operations, when it is dry or raining lightly, a limited data set indicates that outfall dissolved copper levels are very low. On 23 and 24 September 1997, 5 samples were collected from outfall 018 and analyzed for dissolved copper by Battelle Marine Sciences Laboratory. The Battelle Lab is nationally renowned for their ability to accurately measure metals concentrations at very low levels. The very limited data set showed an average dissolved copper level of 2.53 ug/l. The Shipyard expects that long-term outfall dissolved copper concentrations, particularly during light rainfall and dry weather, are relatively stable and below current NPDES copper limits (as converted to dissolved). This hypothesis is supported by a number of factors:

- Outfall total recoverable copper levels increase when it rains. After extensive study, variations in dry dock effluent total recoverable copper levels were found to be associated with particulate material moved by storm water runoff. While larger particles on the dry-dock floors are cleaned up, the finer particles remain and are moved by storm water to the outfalls. Generally the size of particles carried by storm water are too large to be considered dissolved (i.e., larger than 0.45 micron).
- WET results showed no acute impacts and very limited chronic impacts. The WET results also demonstrated that variations in total recoverable copper levels do not predict changes in marine toxicity. A likely hypothesis is that while total recoverable copper varies significantly dissolved copper levels do not. Dissolved copper is much more bioavailable than total recoverable copper. If dissolved copper levels vary significantly WET results would have reflected that variation. Since WET results showed almost no variations and little effect, dissolved copper levels must be over-time below current NPDES copper limits (as converted to dissolved).

Request for Revised Permit Limits. The intent in setting NPDES permit limits for total recoverable copper was to ensure no adverse impacts to the marine environment would occur. WET testing was to ensure that a non-measured pollutant or combination of pollutants would not impact the marine environment. Wet testing as opposed to chemical-specific testing is a more true-to-life measure of aquatic impacts. WET test results showed some important factors that question the relevance of total recoverable copper limits.

- Changes in effluent total recoverable copper levels do not predict changes in aquatic toxicity. While some form (or forms) of copper may impact toxicity, total recoverable copper does not. Total recoverable copper cannot be used as a surrogate measure of marine toxicity and is therefore meaningless as a NPDES permit limit.
- WET test results showed no acute toxicity and very limited chronic toxicity. The WET results indirectly indicate that outfall dissolved copper levels are consistently below the copper Water Quality Standard.

The Shipyard requests that EPA delete permit limits for total recoverable copper for outfalls 018A, 018B, 096A, and 019A. Instead of total recoverable copper limits the Shipyard requests a quarterly monitor-only requirement for chronic WET testing for outfall 019A.

Test Results. WET test results are summarized below.

Table 1

Outfall	Date	Test #	Organism	Test Type	EC50	Qualifier LC50	LC50	Maximum Test Conc.	Copper (ug/l)	Zinc (ug/l)
018	6/22/94	1	M. bahia	Acute	N/A	>	100%	100%	19	30
018	9/28/94	2	M. bahia	Acute	N/A	>	100%	100%	0	0
018	12/7/94	3	M. bahia	Acute	N/A	>	100%	100%	0	0
018	2/8/95	4	M. bahia	Acute	N/A	>	100%	100%	0	0
018	5/22/97	5	M. beryllina	Acute	N/A	>	100%	100%	8	25
018	6/3/97	6	M. beryllina	Acute	N/A	>	100%	100%	15	29
018	6/17/97	7	M. beryllina	Acute	N/A	>	100%	100%	16	27

018	7/22/97	8	M. beryllina	Acute	N/A	>	100%	100%	95	68
018	7/29/97	9	M. beryllina	Acute	N/A	>	100%	100%	7	19
018	8/12/97	10	M. beryllina	Acute	N/A	>	100%	100%	550	320
018	8/26/97	11	M. beryllina	Acute	N/A	>	100%	100%	15	30
018	9/9/97	12	M. beryllina	Acute	N/A	>	100%	100%	7.8	17
018	9/23/98	13	M. beryllina	Acute	N/A	>	100%	100%	7	19
Correlation Coefficient* for NOEC to Copper and Zinc									0	0

Table 2

Outfall	Date	Test #	Organism	Test Type	EC50	Qualifier LC50	LC50	Maximum Conc.	Copper (ug/l)	Zinc (ug/l)
019	6/22/94	1	M. bahia	Acute	N/A	>	100%	100%	23	25
019	9/28/94	2	M. bahia	Acute	N/A	>	100%	100%	0	0
019	12/7/94	3	M. bahia	Acute	N/A	>	100%	100%	0	0
019	2/8/95	4	M. bahia	Acute	N/A	>	100%	100%	0	0
019	5/22/97	5	M. beryllina	Acute	N/A	>	100%	100%	83	58
019	6/3/97	6	M. beryllina	Acute	N/A	>	100%	100%	0	22
019	6/17/97	7	M. beryllina	Acute	N/A	>	100%	100%	9	58
019	7/22/97	8	M. beryllina	Acute	N/A	>	100%	100%	8	9
019	7/29/97	9	M. beryllina	Acute	N/A	>	100%	100%	8	11
019	8/12/97	10	M. beryllina	Acute	N/A	>	100%	100%	0	7
019	8/26/97	11	M. beryllina	Acute	N/A	>	100%	100%	32	31
019	9/9/97	12	M. beryllina	Acute	N/A	>	100%	100%	7.3	19
019	9/23/98	13	M. beryllina	Acute	N/A	>	100%	100%	10	9
Correlation Coefficient* for NOEC to Copper and Zinc									0.00	0.00

Table 3

Outfall	Date	Test #	Organism	Test Type	Qualifier NOEC	NOEC	LOEC	Maximum+ Test Conc.	Copper (ug/l)	Zinc (ug/l)
018	6/22/94	1	C. gigas	Chronic	>	70.0%	70.0%	70%	19	30
018	9/28/94	2	C. gigas	Chronic	>	70.0%	70.0%	70%	0	0
018	12/7/94	3	M. edulis	Chronic	>	70.0%	70.0%	70%	0	0
018	2/8/95	4	S. Purpuratus	Chronic	>	70.0%	70.0%	70%	0	0
018	5/22/97	5	D. Excentricus	Chronic	>	68.0%	68.0%	68%	8	25
018	6/3/97	6	D. Excentricus	Chronic	>	68.0%	68.0%	68%	15	29
018	6/17/97	7	D. Excentricus	Chronic	>	68.0%	68.0%	68%	16	27
018	7/22/97	8	D. Excentricus	Chronic	>	68.0%	68.0%	68%	95	68
018	7/29/97	9	D. Excentricus	Chronic	>	68.0%	68.0%	68%	7	19
018	8/12/97	10	D. Excentricus	Chronic	>	68.0%	68.0%	68%	550	320
018	8/26/97	11	D. Excentricus	Chronic	>	68.0%	68.0%	68%	15	30
018	9/9/97	12	D. Excentricus	Chronic	>	68.0%	68.0%	68%	7.8	17
018	9/23/98	13	D. Excentricus	Chronic		18.0%	35.0%	68%	7	19
Correlation Coefficient* for NOEC to Copper and Zinc									0.08	0.07

Table 4

Outfall	Date	Test #	Organism	Test Type	Qualifier NOEC	NOEC	LOEC	Maximum+ Test Conc.	Copper (ug/l)	Zinc (ug/l)
019	6/22/94	1	C. gigas	Chronic		18%	35%	70%	23	25

019	9/28/94 2	C. gigas	Chronic	>	70%	70%	70%	0	0
019	12/7/94 3	M. edulis	Chronic	>	70%	70%	70%	0	0
019	2/8/95 4	S. Purpuratus	Chronic	>	70%	70%	70%	0	0
019	5/22/97 5	D. Excentricus	Chronic	>	68%	68%	68%	83	58
019	6/3/97 6	D. Excentricus	Chronic	>	68%	68%	68%	0	22
019	6/17/97 7	D. Excentricus	Chronic		9%	18%	68%	9	58
019	7/22/97 8	D. Excentricus	Chronic	>	68%	68%	68%	8	9
019	7/29/97 9	D. Excentricus	Chronic	>	68%	68%	68%	8	11
019	8/12/97 10	D. Excentricus	Chronic	>	68%	68%	68%	0	7
019	8/26/97 11	D. Excentricus	Chronic	>	68%	68%	68%	32	31
019	9/9/97 12	D. Excentricus	Chronic	>	68%	68%	68%	7.3	19
019	9/23/98 13	D. Excentricus	Chronic		35%	68%	68%	10	9
Correlation Coefficient* for NOEC to Copper and Zinc								-0.02	-0.46

+Depending on the test species used and the sample salinity, increasing the sample salinity may have been necessary. Salinity was increased by addition of sea salt or concentrated seawater that diluted the sample.

*The Correlation Coefficient is a measure of the linear relationship between two variables. Values range from -1 to +1. A value toward either end of the range (i.e. -1 or +1) indicates a high degree of linear correlation. Values below zero show an inverse relationship between the two data sets. As values approach zero the linear correlation between the two variables decreases. A value of zero indicates no linear correlation.

EC50: Effective Concentration 50% - Concentration of effluent that would cause an observable adverse affect in 50 percent of the test organisms.

LC50: Lethal Concentration 50% - Concentration of effluent that is lethal to 50 percent of the exposed organisms.

LOEC: Lowest Observed Effect Concentration – the lowest concentration of an effluent or a toxicant that results in observable adverse effects in the aquatic test organisms.

NOEC: No Observed Effect Concentration – the highest concentration of an effluent or a toxicatn at which no adverse effects are observed on the aquatic test organisms.

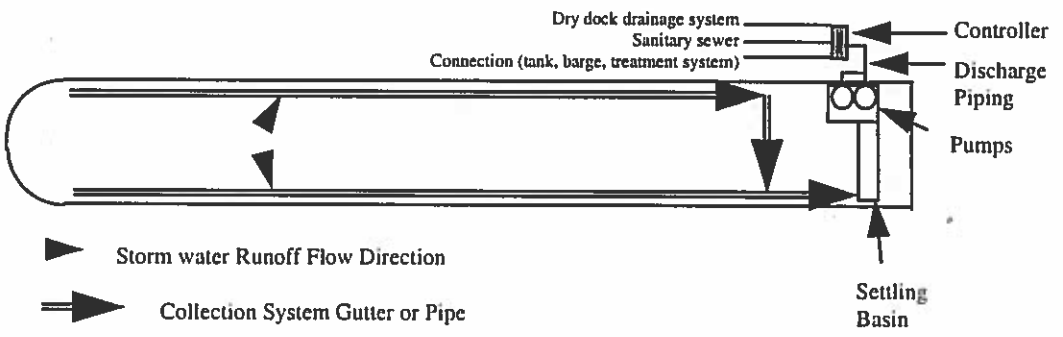
Note: Detection limits for total recoverable copper and zinc analyses were 10ug/l and 20ug/l respectively. Results below the detection limits are reported as zero in the tables above.

SUPPLEMENT 3
Description of Dry Dock Storm Water Collection Systems
NPDES PERMIT RENEWAL APPLICATION
Puget Sound Naval Shipyard

Background. After extensive study, variations in dry dock effluent total recoverable copper levels were primarily found to be associated with storm water runoff. While larger particles on the dry dock floors are *cleaned* up, the finer particles remain and are moved by storm water to the outfalls. Use of vacuum cleaning equipment was unsuccessful. Finer particles are primarily from metal cutting operations and painting. The Shipyard dry dock Storm Water Collection Systems (also called Process Water Collection Systems) were built and installed with the primary purpose of reducing outfall copper concentrations and thereby improve compliance with NPDES total recoverable copper limits. Outfalls 018A, 018B, and 096 discharge storm water from Dry Docks 1, 2, 3, 4, and 5. Outfall 019 discharges storm water from Dry Dock 6.

Prior to installation of the collection systems, storm water, cooling water and groundwater entered a common drainage tunnel and was discharged into Sinclair Inlet. The combined volume was so large as to preclude any means to effectively manage the water. The new collection systems provide a means to capture and manage storm water separately from other sources.

Conceptualized Dry Dock Storm Water Collection System



? Why is the turbidimeter downstream of settling basin.

The controller (see diagram above) when in AUTO mode automatically selects the appropriate discharge route based on real-time *turbidity*. During non-rainfall events there is a small flow of miscellaneous water (potable water, steam condensate) that enters the collection system. The controller sends miscellaneous water into the dry dock drainage system. When it starts to rain the *turbidity* increases triggering the controller to send the first flush of storm water into the sanitary sewer. Discharge of dry dock storm water is approved by Ecology issued State Waste Discharge Permit. During special operations such as using open-lance high-pressure water to remove paint, the controller can be manually set to a defined discharge path. In this example the water would be sent to a barge and/or tank for treatment.

When is this treatment

Initial treatment of dry dock storm water runoff is by settling. Each dry dock has one or more settling basins to remove heavier particles carried by the runoff.

After dry dock industrial operations are complete and prior to dry dock flooding the settling basin(s) is cleaned.

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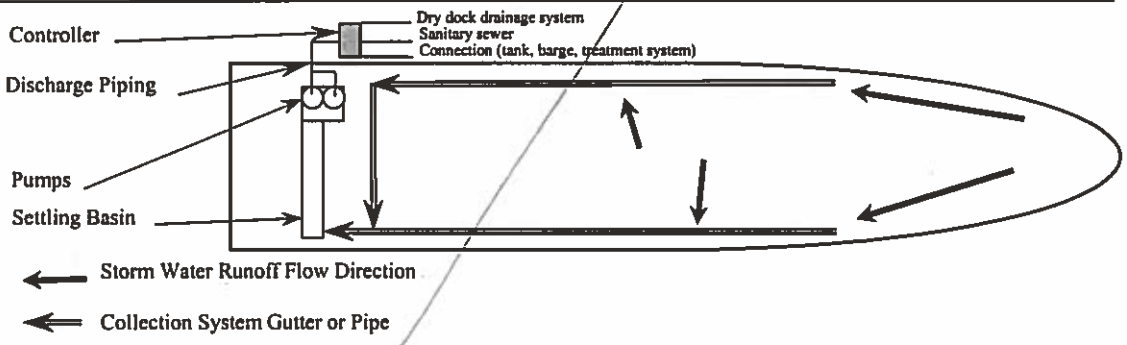
SUPPLEMENT 3
Description of Dry Dock Storm Water Collection Systems
NPDES PERMIT RENEWAL APPLICATION
Puget Sound Naval Shipyard

Background. After extensive study, variations in dry dock effluent total recoverable copper levels were primarily found to be associated with storm water runoff. While larger particles on the dry-dock floors are cleaned up the finer particles remain and are moved by storm water to the outfalls. Use of vacuum cleaning equipment was unsuccessful. Finer particles are primarily from metal cutting operations and painting. The Shipyard dry dock Storm Water Collection Systems (also called Process Water Collection Systems) were build and installed with the primary purpose of reducing outfall copper concentrations and thereby improve compliance with NPDES total recoverable copper limits. Outfalls 018A, 018B, and 096A discharge storm water from dry docks 1, 2, 3, 4, and 5. Outfall 019A discharges storm water from dry dock 6.

Prior to installation of the collection systems, storm water, cooling water and groundwater entered a common drainage tunnel and was discharged into Sinclair Inlet. The combined volume was so large as to preclude any means to effectively manage the water. The new collection systems provide a means to capture and manage storm water separately from other sources.

Conceptualized Dry Dock Storm Water Collection System



The controller (see diagram above) when in AUTO mode automatically selects the appropriate discharge route based on real-time flow rate input. During non-rainfall events there is a small flow of miscellaneous water (potable water, steam condensate) that enters the collection system. The controller sends miscellaneous water into the dry dock drainage system. When it starts to rain the flow rate increases triggering the controller to send the first flush of storm water into the sanitary sewer. Discharge of dry dock storm water is approved by Ecology issued State Waste Discharge Permit. During special operations, for example, using open-lance high-pressure water to remove paint, the controller can be manually set to a defined discharge path. In this example the water would be sent to a barge and/or tank for treatment.

Initial treatment of dry dock storm water runoff is settling. Each dry dock has one or more settling basins to remove heavier particles carried by the runoff.

After dry dock industrial operations are complete and prior to dry dock flooding the settling basin(s) is cleaned.

Revised

SUPPLEMENT 4
Description of Dry Dock Operations
NPDES PERMIT RENEWAL APPLICATION
Puget Sound Naval Shipyard

There are two main dry dock operational states that result in discharges into Sinclair Inlet. Most of the time the caissons are in-place, there is no water in the dry docks and typical Shipyard operations are underway. Discharges from this normal mode of operation are, as discussed elsewhere in the application, non-contact cooling water, storm water, steam condensate, potable water, groundwater (hydrostatic relief), demineralized water, and salt water. The water is discharged into Sinclair Inlet via outfalls 018A, 018B, 096A, and 019A (pumpwells 5, 4, 2, and 6 respectively). Water that is normally discharged from these outfalls is termed "drainage."

The other main dry dock operational state is vessel docking/undocking. The sequence of vessel docking/undocking takes place as follows:

- The dry-dock floor is thoroughly cleaned and inspected.
- The dry dock is filled with Sinclair Inlet water,
- The caisson is floated and moved aside,
- Vessel movement commences,
- The caisson is returned,
- The dry dock is dewatered (the water in dry dock is pumped back into Sinclair Inlet),
- The dry dock returns to its normal mode of operation.

Docking/undocking a vessel in any one of dry docks 1 through 5 will in many cases require short-term changes in where drainage water is discharged. A single drainage tunnel hydraulically connects dry docks-1 – 5. Valves in the drainage tunnel are used to isolate the dry dock being flooded. Isolating a particular dry dock may require the Shipyard use a non-primary pumpwell to temporarily discharge drainage water. The quantity and quality of the water discharge from non-primary pumpwells is equivalent to (and is in fact the same) as the water discharged from the primary pumpwells. A docking/undocking typically takes one day but can take up to a week. Routine NPDES sampling are only collected from primary the pumpwells.

Another practice now becoming more common, particularly in dry dock 6, during docking/undocking evolutions is to leave the dry dock partially flooded for one to five days before vessel movement. The caisson will remain in-place and the dry dock will be about half filled with Sinclair Inlet water. When the dry dock is partially flooded the Shipyard conducts vessel operational tests which in the past have been conducted pierside. The reason for this change is to minimize the potential of petroleum spills during fueling operations. During this period the drainage pumps are used to expel Sinclair Inlet water (which entered from the dry dock) that enters the pumpwell sump from valve leakage. When partially flooded the short-term discharge does not constitute an industrial discharge. The Shipyard requests EPA incorporate the following statement in the permit to address this non-representative situation: "Applicable outfall sampling as specified in this permit will be suspended during periods when a dry dock is partially flooded."

SUPPLEMENT 5
Dry Dock "Intake" Water Characteristics
NPDES PERMIT RENEWAL APPLICATION
Puget Sound Naval Shipyard

The discharges from outfalls 018A, 018B, 096A, and 096A are significantly composed of water from Sinclair Inlet (i.e., salt water). Vessel once-through non-contact cooling is withdrawn directly from Sinclair Inlet and discharged into the drainage tunnel (see supplement 4). Salt water from caisson leakage enters the drainage tunnel. Dry-dock hydrostatic relief water is another source of salt water. While hydrostatic relief water is "groundwater" the direct surface water influence toward the southern extent of the dry docks is very high. Sinclair Inlet water contains about 31 part per thousand (ppt) salinity. Salinity is about 25 ppt and 29 ppt at outfalls 018 (A & B) and 019A respectively.

Table V of EPA form 2C contains the option of including qualitative information about "intake" water. While the Shipyard does not use intake water in the commonly conceived manner (such as steam electric power generation) we do intake surface and groundwater. The surface and groundwater sources naturally contain some of the chemicals listed on form 2C. Many of the basic elements in salt water that are also listed on form 2C are shown below.

Chlorine	Aluminum	Arsenic	Antimony
Magnesium	Iron	Copper	Silver
Sulfur	Molybdenum	Tin	Cadmium
Boron	Zinc	Manganese	
Nitrogen	Nickel	Titanium	

Source: Handbook of Chemistry and Physics, 64th edition, CRC Press, 1984.

In some cases we have marked a pollutant "believed present" solely because it is a common element in salt water.

SUPPLEMENT 6
Additional Information
NPDES PERMIT RENEWAL APPLICATION
Puget Sound Naval Shipyard

A. **Shipyard Reorganization.** Puget Sound Naval Shipyard is scheduled to divide into two separate commands in October 1998. The Navy support areas (housing, parking, shopping, entertainment, and recreation) of the current Shipyard will become Naval Station Bremerton. The industrial (dry docks, machine shops, etc.) and industrial support (warehouses, equipment maintenance, steam plant, etc.) areas of the Shipyard will continue to be called Puget Sound Naval Shipyard. The Shipyard would like to discuss with EPA ways to address this planned change when the permit is reissued.

B. **Spill reporting.** Section IV.G.1.c.2. of the current permit requires twenty-four hour telephone notice to EPA and a letter within 5-days of any spill into receiving waters in excess or a reportable quantity (RQ) as listed in 40 CFR 117. In accordance with 40 CFR 302 the Shipyard also reports spills above a RQ in accordance with the stated cite and 40 CFR 117. The local document that implements spill requirements is Shipyard Instruction P5090(1), Oil and Hazardous Substance Spill Prevention and Contingency Planning Manual. P5090(1) is a formal document that has been approved (signed) by the EPA. The NPDES permit and 40 CFR 302 result in the Shipyard reporting the same spills twice to different groups within EPA. This duplicative effort is a drain on Shipyard resources. The Shipyard requests that EPA delete section IV.G.1.c.2 when the permit is reissued.

Section IV.G.1.c.3 of the current permit requires twenty-four hour telephone notice to EPA and a letter within 5-days of any spill into receiving waters that is or could reasonably be classified as a hazardous waste. Washington Administrative Code 173-303-145, Spills and Discharges into the Environment, requires "any person who is responsible for a spill or non-permitted discharge must immediately notify the individuals and authorities." For spills into surface water the requirement is to notify all local authorities in accordance with the local emergency plan. Section IV.G.1.c.3 duplicates the requirement of WAC 173-303-145. The Shipyard requests that EPA delete section IV.G.1.c.3 when the permit is reissued.

C. **Quantification Level.** The Shipyard requests the current NPDES permit condition: "For the purposes of reporting on the discharge monitoring report, all analytical values below the quantification level may be reported equal to 0[zero]" be incorporated into the reissued permit.

D. **Storm Water.** The Shipyard is currently working on a research and development project called the Storm Water Technology Test Bed. The Test Bed project has two main objectives. The first is to evaluate advanced storm water treatment technologies. West of Dry Dock 5 in an area referred to as Site 1 the Shipyard is in the process of installing a 8' X 16' below ground vault to test physical/chemical storm water treatment media. The treatment system may use and evaluate real-time control strategies.

E. **Environmental Investment (ENVVEST) Project.** The Shipyard is currently working with EPA to gain approval of an ENVVEST project titled Integrated Marine Environmental Compliance Program. Many aspects of the Shipyard's ENVVEST proposal will directly relate to this NPDES permit renewal application and generally to increasing our understanding of marine impacts on Sinclair Inlet. The Shipyard hopes that this application along with the ENVVEST project will be considered complementary efforts and looks forward to working with EPA to achieve the needed integration.

F. **Request for Date Change of Report Submittal.** The Shipyard requests that monthly Discharge Monitoring Reports (DMRs) which are presently required to be postmarked by the 10th day of the following month be changed to the 15th day of the following month. Presently, it is difficult for the

Shipyard to get the sample result, prepare the report, and route the report through the Shipyard review process by the 10.th

G. **Small Volumes of Non-Contact Cooling Water.** The Shipyard requests the permit include authorization to discharge small volumes of non-contact cooling water into the storm sewer system or directly into Sinclair Inlet from small and portable equipment, such as air compressors. The following language is requested: "The discharge of small volumes of non-contact cooling water is authorized provided it is of potable or salt water quality. All non dry-dock discharge of non-contact cooling water must be addressed in the Storm Water Pollution Prevention Plan."

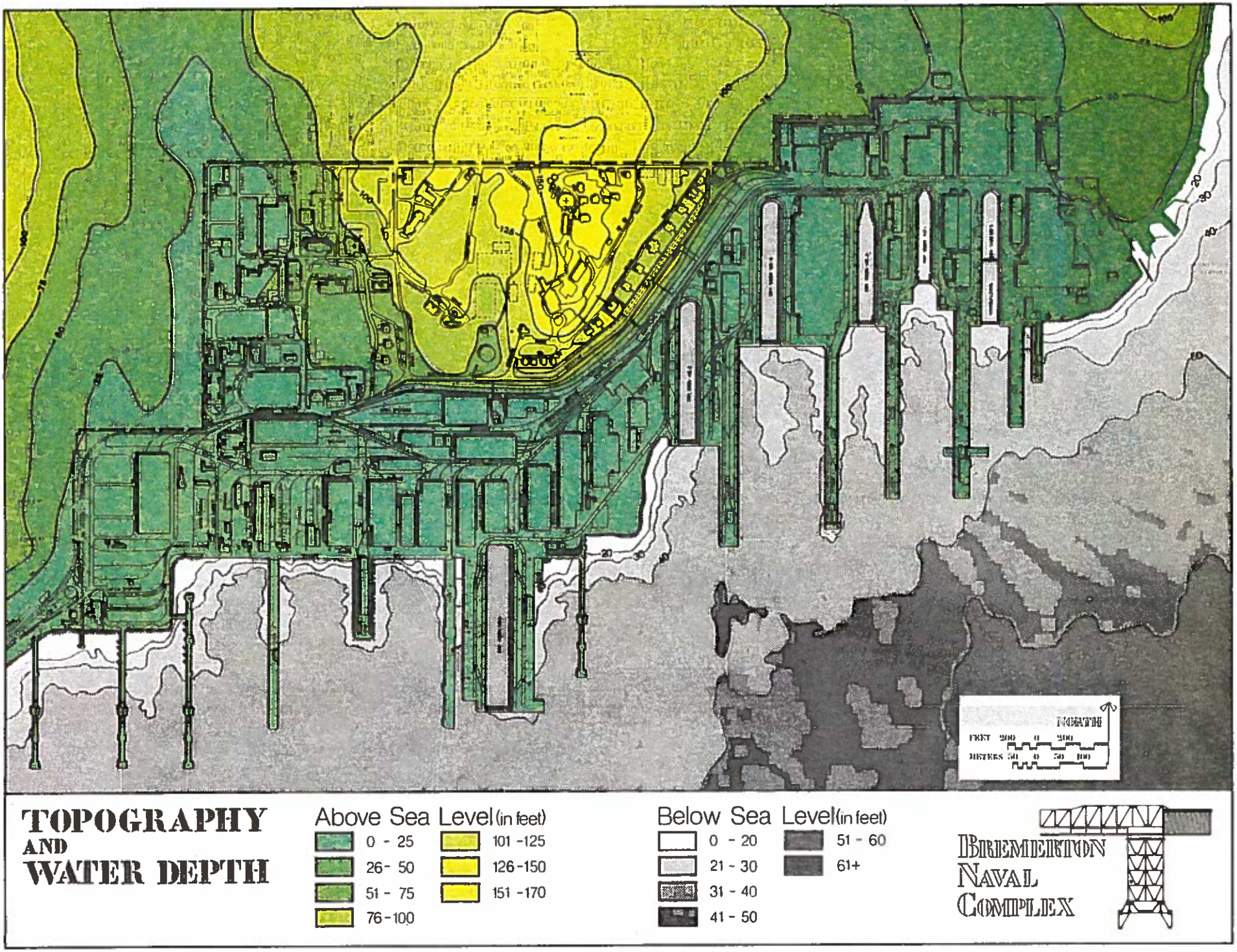

TOPOGRAPHY
AND
WATER DEPTH
Above Sea Level (in feet)
0 - 25
26 - 50
51 - 75
76 - 100
101 - 125
126 - 150
151 - 170
Below Sea Level (in feet)
0 - 20
21 - 30
31 - 40
41 - 50
51 - 60
61+
NORTH
FEET 200 0 200
METERS 50 0 50 100
BREMERTON
NAVAL
COMPLEX

FIGURE 1-7

V. Nonstormwater Discharges

A. I certify under penalty of law that the outfall(s) covered by this application have been tested or evaluated for the presence of nonstormwater discharges, and that all nonstormwater discharges from these outfall(s) are identified in either an accompanying Form 2C or Form 2E application for the outfall.

Name and Official Title (type or print)	Signature	Date Signed
MICKEY D. HALL FACILITIES ENGR. DIRECTOR		16 SEPT 98

B. Provide a description of the method used, the date of any testing, and the onsite drainage points that were directly observed during a test.

In 1991/1992 EMCON Northwest, Inc. surveyed the Shipyard storm sewer system in preparation of a storm water base map. Illicit blackwater connections were identified and corrected (Project 0611-011.18). A Sanitary Sewer to Storm Drain Illicit Cross Connection Study was conducted in the Shipyard in 1993 by Sitts and Hill Engineers, Inc. (Contract No. N44255-93-D-4156). The findings of this study were addressed in the Shipyard storm water pollution prevention plan (SWPPP).

VI. Significant Leaks or Spills

Provide existing information regarding the history of significant leaks or spills of toxic or hazardous pollutants at the facility in the last three years, including the approximate date and location of the spill or leak, and the type and amount of material released.

Type	Amount	Date	Location
Sewage and seawater (est. 80%-90% seawater)	3,000 gallons	1/2/95	Pier 3, north
Sewage	750 gallons	1/7/95	B431, east side
Cleaning oil/floor wax	<1 gallon	1/8/95	Pier 5, east
Diesel fuel	1 to 1 1/2 gallons	1/13/95	Pier 7 and 8
JP-5 fuel	1 gallon	1/13/95	Pier "E"
Oil sheen	1 gallon	1/14/95	Pier "B"
Lubricant	1/2 cup	1/14/95	Pier "B"
Lubricant	2 gallons	1/15/95	Pier "B"
Diesel	<1 quart	1/19/95	DD 2 caisson, east
Oil	2,000 to 2,500	1/25/95	Pier "B", southeast
Lubricant	1.5 gallons	1/31/95	Pier "B"
DMF	1 gallon	1/31/95	Mooring "E"
Lubricant	3 gallons	2/1/95	Pier "B"
DMF	<5 gallons	2/2/95	DD 2 to Pier 4 NE
Oil	<1 gallon	2/3/95	Pier 4 NE
Diesel	2 cups	2/6/95	Farragut and 6th streets
Oil	1 quart	2/19/95	Between Piers 4 and 5
Diesel	<1 quart	3/10/95	Between Piers "C" and "D"
Lubricant	1 to 2 gallons	3/16/95	Pier 3 NE
Lubricant	2 gallons	3/17/95	Pier 6
Oil residue	>1 cup	3/25/95	Pier 6
Bilge water	1 pint	3/31/95	Pier 3
PCB contaminated water	10 to 30 gallons	3/31/95	DD 6
Varnish	<1 pint	4/12/95	Pier "C"
Sewage	500 gallons	4/14/95	DD 5 SW
Lubricant	1 gallon	4/17/95	Pier "D" to Pier "B"
Diesel	5 gallons	4/20/95	Pier 4
Diesel	<50 gallons	5/8/95	Pier 5
Light oil	<1 quart	5/10/95	DD 2
Hydraulic fluid	3-4 ounces	5/16/95	Pier 6 NW
Bilge oil	<1 pint	5/24/95	Pier 6
Oil sheen	1 to 1.5 pints	6/19/95	South of Pier 6
Oil Sheen	1/2 gallon	6/26/95	Pier 5 NE
Diesel	<1 gallon	7/10/95	DD 6 caisson
Lead contaminated soil	<10 pounds of lead	7/8/95	Wycoff/ West Streets
Diesel	1 gallon	7/12/95	DD5
Diesel	1 gallon	7/24/95	B871 fuel tank
Waste oil	25 gallons	8/2/95	Pier 3 east
Bilge oil	1/4 cup	8/16/95	Pier 5
Possible solvent	<1/2 cup	9/12/95	Between Piers "B"/"C"
JP-5	<25 gallons	9/18/95	Pier "C" west (CALIFORNIA)

Revised

DFM (diesel fuel, marine)	1 pint	9/27/95	Pier "D" (TODD SY)
PCB contaminated water	810 gallons	11/3/95	Dry dock 2 (EX-596)
Lube oil	<1 gallon	11/22/95	Pier "B" (NIMITZ)
Lube oil	<5 gallons	11/22/95	Pier "B" (NIMITZ)
DMF (diesel fuel, marine)	<1 gallon	12/9/95	Dry dock 2 caisson
Petroleum based product	<2 gallons	12/20/95	Pier "D" to Pier 6
Hydraulic oil	10 gallons	1/11/96	Pier "C"
Hydraulic fluid	<3 gallons	1/12/96	Pier "C"
PCB contaminated water (18 ppb)	150 gallons	1/18/96	Dry dock 2 ex-596
Motor oil	<1 cup	1/24/96	Pier "C"
Lube oil	<2 pints	2/2/96	Pier 5 west
Lubricating oil	3 ounces	2/11/96	Quay between finger pier and Pier 9
Diesel fuel	1 pint	2/12/96	Quay NW of Pier "D"
Diesel fuel	100 gallons	2/26/96	S. E. corner of Pier 5
Petroleum	0.1 gallon	3/1/96	S. W. Pier 7
10 weight oil	.125 gallon	3/2/96	Mooring E
Oil	<1 gallon	3/4/96	S. W. corner of Pier 3
Hydraulic oil	<1 gallon	4/1/96	Topside dry dock 6 east
DFM (diesel fuel marine)	<10 gallons	4/2/96	Between Pier 4 and Pier 5
Lube oil	1/2 gallon	4/6/96	Pier "C", CGN 41
Lube oil	25 gallons	4/23/96	Pier 4 NE
Petroleum product	Unknown	5/9/96	Pier 4
Lube oil	10 gallons	5/13/96	Pier "D"
JP-5	2 gallons	5/31/96	Dry dock 6
Lube oil	20 gallons	6/6/96	Pier "D"
JP-5	70 gallons	6/11/96	Pier "D", Nimitz
Oil	<1 gallon	7/14/96	Pier 3, Nimitz
Waste oil	<1 pint	7/18/96	Pier 5, Holland
Hydraulic fluid	<1 pint	8/4/96	Pier 4
JP-5	1300 gallons	8/26/96	Pier 3, USS Nimitz
Diesel fuel	1 pint	9/28/96	Pier 4
JP-5	1 pint	10/5/96	Pier "B", CVN 72
2190 Lube oil	1 gallon	10/12/96	Pier 6, SSN 670 Finback
Lube/waste oil	3/4 gallon	10/28/96	Pier 6, SSN 670
Lube oil	100 gallons	10/10/96	Pier "B"
JP-5/diesel	300 gallons	11/20/96	Pier "B"
Lube oil	1 gallon	11/26/96	Pier "B"
Lube oil	0.05 gallon	1/16/97	Pier 3, CVN-68
Waste oil	0.125 gallon	1/18/97	Building 431 waste oil transfer site (portable
Marine diesel fuel	30 gallons	2/12/97	Parchee, Pier 6
Lube oil	0.5 gallon	2/18/97	East side Pier 3
Lube oil	0.1 gallon	2/20/97	CVN 70, east side of Pier 3
Lube oil	10 gallons	3/10/97	CVN 70, east side of Pier 3
Lube oil	1 gallon	3/13/97	CVN 70, east side of Pier 3
Diesel	1 cup	3/16/97	Pier 3, Shipyard dive boat
Lube oil	5 gallons	3/16/97	CVN 70, Pier 3
Lube oil	1 gallon	3/18/97	CVN 70, Pier 3
120 ppb PCB/water	700 gallons	3/19/97	Dry dock 6, ex-625
Oil	0.5 gallon	3/24/97	Dry dock 1 caisson
CHT	7,000 gallons	4/2/97	USS Nimitz, Pier "B"
JP-5	25 gallons	5/27/97	USS Rainier, Pier "D"
Diesel	15 gallons	6/4/97	Tug 767, Pier 5
Hydraulic fluid	0.1 gallon	6/30/97	Pier 6, northwest
Oily bilge water	35 gallons	7/12/97	Pier 5, SWOB 7
Sewage	38,000 gallons	7/18/97	Pier 3
Sewage	7,500 gallons	7/25/97	Southwest corner of Dry Dock 4
Oil	15 gallons	9/23/97	Pier 5, south
JP-5 fuel	100 gallons	10/6/97	Pier "B"

Revised

DFM	>10 gallons	11/13/97	Pier "C"
Lube oil	5 gallons	12/3/97	Pier "C"
Hydraulic oil	1.5 gallons	1/9/98	Parche, Pier 6
Marine diesel fuel/F-76	15 gallons	1/18/98	CV-63, Dry Dock 6
Lube oil	4 gallons	1/23/98	Pier "C"

VII. discharge Information

A, B, C, & D: See instructions before proceeding. Complete one set of tables for each outfall. Annotate the outfall number in the space provided.

Tables VII-A, VII-B, and VII-C are included on separate sheets numbered VII-1 and VII-2.

E. Potential discharges not covered by analysis - is any toxic pollutant listed in table 2F-2, 2F-3 or 2F-4, a substance or a compound of a substance which you currently use or manufacture as an intermediate or final product or byproduct?

■ Yes (list all such pollutants below) * ☐ No (go to Section IX)

Table 2F-2	Chloroform (HSMS)	Cyclohexane (HSMS)
Chlorine (HSMS)	1,2-Dichloroethane (HSMS)	2,4-Dichlorophenoxyacetic acid (HSMS)
Fluoride (HSMS)	1,1-Dichloroethylene (HSMS)	Diazinon (HSMS)
Nitrogen (HSMS)	1,2-Dichloropropane (HSMS)	Dicamba (HSMS)
Phosphorus (HSMS)	Methyl chloride (HSMS)	Diuron (HSMS)
Sulfate (HSMS)	Toluene (HSMS)	Epichlorohydrin (HSMS)
Sulfite (HSMS)	1,1,1-Trichloroethane (HSMS)	Formaldehyde (HSMS)
Surfacants	Trichloroethylene (HSMS)	Furfural (HSMS)
Boron (HSMS)	Vinyl chloride (HSMS)	Isopropanolamine (HSMS)
Molybdenum (HSMS, in cutting debris)	1,2-Diphenylhydrazine (as Azobenzene),	Methyl methacrylate (HSMS)
Tin (HSMS)	(HSMS)	Propylene oxide (HSMS)
Titanium (HSMS, in cutting debris)		Resorcinol (HSMS)
	Table 2F-4	Strychnine (HSMS)
Table 2F-3	Asbestos (HSMS)	Styrene (HSMS)
Phenols (HSMS)	Acetaldehyde (HSMS)	Triethylamine (HSMS)
Acrolein (HSMS, in cutting debris)	Allyl alcohol (HSMS)	Trimethylamine (HSMS)
Acrylonitrile (HSMS, in cutting debris)	Amyl acetate (HSMS)	Vanadium (HSMS)
Benzene (HSMS)	Butyl acetate (NSMS)	Vinyl acetate (HSMS)
Bromoform (HSMS)	Carbon disulfide (HSMS)	Xylene (HSMS)
Carbon Tetrachloride (HSMS)	Chlorpyrifos (HSMS)	Xylenol (HSMS)
Chlorobenzene (HSMS, in cutting debris)	Cresol (HSMS)	Zirconium (HSMS)

* Substances with the "(HSMS)" designation are listed because they are contained in materials/products used in the Shipyard.

VIII. Biological Toxicity Testing Data

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last three years?

☐ Yes (list all such pollutants below) ■ No (go to Section IX)

Revised

VII. Discharge Information (Continued from page 3 of Form 2F) for Outfall 002

Part A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Oil and Grease	N/A	N/A	N/A	N/A		
TPH	1.0 mg/L	NA	0.25 mg/L	NA	4	Vehicals and equipment
Biological Oxygen Demand (BOD5)	7.0 mg/L	N/A	4.67 mg/L	N/A	3	Organic matter
Chemical Oxygen Demand (COD)	140 mg/L	N/A	105.66 mg/L	N/A	3	Organic matter
Total Suspended Solids (TSS)	32.2 mg/L	N/A	23.0 mg/L	N/A	4	Suspended matter in surface runoff
Total Kjeldahl Nitrogen	N/A	N/A	N/A	N/A	A	
Nitrate plus Nitrite Nitrogen	N/A	N/A	N/A	N/A	A	
Total Phosphorus	N/A	N/A	N/A	N/A	A	B
	Minimum		Maximum			
pH	7.1	N/A	7.8	N/A	4	

A Under the current NPDES permit, the Shipyard is considered an industrial facility and sampling for these parameters was not required. Per a telephone communication between Dave Ragsdale, EPA Region X, and Matt Jabloner, Water Program Manager, Puget Sound Naval Shipyard, dated 19 Nov 97, three years of sampling under the current NPDES permit has sufficiently characterized the Shipyard storm water discharges. Mr. Ragsdale concurred that limited additional sampling for purposes of this application would not add to the knowledge base about the quality of those discharges and storm water sampling results obtained during the current permit would be sufficient for purposes of this application.

B Sources of this pollutant (detergents, boiler waters, fertilizers, body wastes, food residues) are not discharged into this outfall

Part B - List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Arsenic	10 µg/L	NA	1.86 µg/L	NA	4	Treated wood
Cadmium	174 µg/L	NA	40.25 µg/L	NA	4	Paint
Chromium	37.7 µg/L	NA	10.04 µg/L	NA	4	Vessel disposal operations
Copper	5370 µg/L	NA	968.58 µg/L	NA	4	Vessel disposal operations
Lead	138 µg/L	NA	42.8 µg/L	NA	4	Past practices A
Mercury	0.2 µg/L	NA	0.025 µg/L	NA	4	Past practices B
Nickel	2490 µg/L	NA	534.38 µg/L	NA	4	Vessel recycle operations
Zinc	22800 µg/L	NA	5567.13 µg/L	NA	4	Galvanized metal

A In the past, raw lead used for ballast and shielding was stored outdoors, exposed to storm water

B This outfall drains an area of Installation Restoration Site 10 east. Some of the pollutants in this outfall may have migrated from fill materials surrounding this storm sewer system.

Revised

Part C - List each pollutant shown in Tables 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Iron	13600 µg/L	NA	4671.57 µg/L	NA	1	Vessel recycle operations
Aluminum	977 µg/L	NA	506 µg/L	NA	1	Exposed staging and equipment.
Barium	2050 µg/L	NA	1360.47 µg/L	NA	1	Paint
Beryllium	0.2 µg/L	NA	0.067 µg/L	NA	1	Detected in blank
Molybdenum		NA		NA		Recycling operations
Titanium		NA		NA		Recycling operations
Cobalt	45.2 µg/L	NA	28.47 µg/L	NA	1	Detected in blank
Manganese	2750 µg/L	NA	1576.67 µg/L	NA	1	Background
Vanadium	2.0 µg/L	NA	0.67 µg/L	NA	1	Detected in blank
Magnesium	1110000 µg/L	NA	372080 µg/L	NA	1	Detected in blank. Present in seawater (approximately 1,445 mg/L).

Part D - Provide data for the storm events which resulted in the maximum values for the flow weighted composite sample.

Note: Flow weighted composite samples were not required by the Shipyards NPDES permit. Specific rainfall event information is available if requested.

Based on sediment QA - tossed in resubmittal.

Revised

VII. Discharge Information (Continued from page 3 of Form 2F) for Outfall 006

Part A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Oil and Grease	N/A	N/A	N/A	N/A	N/A	
TPH	Not detected	N/A	Not detected	N/A	3	Vehicles and equipment
Biological Oxygen Demand (BOD5)	10 mg/L	N/A	5 mg/L	N/A	2	Organic matter
Chemical Oxygen Demand (COD)	24 mg/L	N/A	18.7 mg/L	N/A	3	Organic matter
Total Suspended Solids (TSS)	203 mg/L	N/A	58.6 mg/L	N/A	4	Suspended matter in surface runoff
Total Kjeldahl Nitrogen	N/A	N/A	N/A	N/A	[A]	
Nitrate plus Nitrite Nitrogen	N/A	N/A	N/A	N/A	[A]	
Total Phosphorus	N/A	N/A	N/A	N/A	[A]	[B]
	Minimum		Maximum			
pH	7.2	N/A	7.6	N/A	3	

[A] Under the current NPDES permit, the Shipyard is considered an industrial facility and sampling for these parameters was not required. Per a telephone communication between Dave Ragsdale, EPA Region X, and Matt Jabloner, Water Program Manager, Puget Sound Naval Shipyard, dated 19 Nov 97, three years of sampling under the current NPDES permit has sufficiently characterized the Shipyard storm water discharges. Mr. Ragsdale concurred that limited additional sampling for purposes of this application would not add to the knowledge base about the quality of those discharges and storm water sampling results obtained during the current permit would be sufficient for purposes of this application.

[B] Sources of this pollutant (detergents, boiler waters, fertilizers, body wastes, food residues) are not discharged into this outfall.

Part B - List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Arsenic	14.6 µg/L	N/A	3.3 µg/L	N/A	4	Treated wood
Cadmium	103 µg/L	N/A	21.9 µg/L	N/A	4	Paint
Chromium	59.4 µg/L	N/A	8.05 µg/L	N/A	4	Vessel disposal operations.
Copper	516 µg/L	N/A	197.6 µg/L	N/A	4	Vessel disposal operations.
Lead	623 µg/L	N/A	109.8 µg/L	N/A	4	Shielding and ballsat
Mercury	0.36 µg/L	N/A	0.045 µg/L	N/A	4	Past practices
Nickel	2440 µg/L	N/A	588.4 µg/L	N/A	4	Vessel disposal operations.
Zinc	16600 µg/L	N/A	3971.7 µg/L	N/A	4	Galvanized metal.
Di-n-butylphthalate	12 µg/L	N/A	4.98 µg/L	N/A	4	This compound was found twice, once also in the method blank.
Bis (2-ethylhexyl) phthalate	42 µg/L	N/A	15.1 µg/L	N/A	3	Liquid used in vacuum pumps.
Butylbenzylphthalate	4 µg/L	NA	2 µg/L	NA	2	Plasticizer for polyvinyl and cellulosic resins, organic intermediate.
Chloroform	14 µg/L	NA	7 µg/L	NA	2	Potable water
Bromodichloromethane	28 µg/L	NA	14 µg/L	NA	2	Fire retardant; solvent; an intermediate in the synthesis of other compounds
Dibromochloromethane	1.3 µg/L	NA	0.65 µg/L	NA	2	Organic synthesis.
Bromoform	4.9 µg/L	NA	2.45 µg/L	NA	2	Solvent
Acetone	7.2 µg/L	NA	3.6 µg/L	NA	2	Solvent
Toluene	6.8 µg/L	NA	3.4 µg/L	NA	2	Solvent
Xylene	0.81 µg/L	NA	0.41 µg/L	NA	2	Solvent

Revised

Heptachlor	0.016 µg/L	NA	0.016 µg/L	NA	1	Insecticide

Part C - List each pollutant shown in Tables 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Barium	1500 µg/L	NA	739.5 µg/L	NA	1	Paint
Iron	56700 µg/L	NA	28752.5 µg/L	NA	1	Vessel disposal operations.
Magnesium	12300 µg/L	NA	4915 µg/L	NA	1	Present in seawater (approximately 1,445 mg/L).
Manganese	1100 µg/L	NA	560.5 µg/L	NA	1	Background.
Aluminum	5010 µg/L	NA	1367.75	NA	1	Exposed staging and equipment.
Antimony	26.4 µg/L	NA	15 µg/L	NA	1	Solder, lead shielding and ballast.
Cobalt	39.9 µg/L	NA	23 µg/L	NA	1	Various ferric alloys.
Selenium	0.5 µg/L	NA	0.125 µg/L	NA	1	Special hull treatment tiles.
Vanadium	10.4 µg/L	NA	2.6 µg/L	NA	1	Vessel disposal operations.
Gasoline	53 µg/L	NA	26.5 µg/L	NA	1	Vehicles, fueling operations.
Diesel	1006 µg/L	NA	503 µg/L	NA	1	Vehicles, fueling operations.

Part D - Provide data for the storm events which resulted in the maximum values for the flow weighted composite sample.

Note: Flow weighted composite samples were not required by the Shipyards NPDES permit. Specific rainfall event information is available if requested.

Revised

VII. Discharge Information (Continued from page 3 of Form 2F) for Outfall 013

Part A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Oil and Grease	N/A	N/A	N/A	N/A	N/A	
TPH	8.1 mg/L	N/A	3 mg/L	N/A	4	Vehicles and equipment
Biological Oxygen Demand (BOD5)	24 mg/L	N/A	8.7 mg/L	N/A	4	Organic matter
Chemical Oxygen Demand (COD)	87 mg/L	N/A	55 mg/L	N/A	4	Organic matter
Total Suspended Solids (TSS)	43 mg/L	N/A	24.9 mg/L	N/A	4	Suspended matter in surface runoff
Total Kjeldahl Nitrogen	N/A	N/A	N/A	N/A	A	
Nitrate plus Nitrite Nitrogen	N/A	N/A	N/A	N/A	A	
Total Phosphorus	N/A	N/A	N/A	N/A	A	B
	Minimum		Maximum			
pH	7.3	N/A	7.3	N/A	4	

A Under the current NPDES permit, the Shipyard is considered an industrial facility and sampling for these parameters was not required. Per a telephone communication between Dave Ragsdale, EPA Region X, and Matt Jabloner, Water Program Manager, Puget Sound Naval Shipyard, dated 19 Nov 97, three years of sampling under the current NPDES permit has sufficiently characterized the Shipyard storm water discharges. Mr. Ragsdale concurred that limited additional sampling for purposes of this application would not add to the knowledge base about the quality of those discharges and storm water sampling results obtained during the current permit would be sufficient for purposes of this application.

B Sources of this pollutant (detergents, boiler waters, fertilizers, body wastes, food residues) are not discharged into this outfall.

Part B - List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Arsenic	3 µg/L	N/A	1.25 µg/L	N/A	4	Treated wood
Cadmium	3 µg/L	N/A	1.75 µg/L	N/A	4	Paint on scrap metal
Chromium	13 µg/L	N/A	3.25 µg/L	N/A	4	Scrap metal from vessel recycling
Copper	50 µg/L	N/A	38.5 µg/L	N/A	4	Scrap metal from vessel recycling
Lead	27 µg/L	N/A	15 µg/L	N/A	4	Scrap metal from vessel recycling
Mercury	Not detected	N/A	Not detected	N/A	4	
Nickel	21 µg/L	N/A	11.5 µg/L	N/A	4	Scrap metal from vessel recycling
Zinc	150 µg/L	N/A	113 µg/L	N/A	4	Scrap metal from vessel recycling
Bis(2-ethylhexyl) phthalate	28.07 µg/L	N/A	12.1 µg/L	N/A	4	Vacuum pumps
Di-n-butylphthalate	63.44 µg/L	N/A	15.9 µg/L	N/A	4	Plastics and resins

Part C - List each pollutant shown in Tables 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		

Revised

Part D - Provide data for the storm events which resulted in the maximum values for the flow weighted composite sample.
Note: Flow weighted composite samples were not required by the Shipyards NPDES permit. Specific rainfall event information is available if requested.

Revised

VII. Discharge Information (Continued from page 3 of Form 2F) for Outfall 025

Part A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Oil and Grease	N/A	N/A	N/A	N/A	N/A	
TPH	8 mg/L	N/A	3.5 mg/l	N/A	5	Vehicles and equipment
Biological Oxygen Demand (BOD5)	6 mg/L	N/A	3 mg/L	N/A	2	Organic matter
Chemical Oxygen Demand (COD)	240 mg/L	N/A	115.3 mg/L	N/A	3	Organic matter
Total Suspended Solids (TSS)	120 mg/L	N/A	68 mg/L	N/A	4	Suspended matter in surface runoff
Total Kjeldahl Nitrogen	N/A	N/A	N/A	N/A	[A]	
Nitrate plus Nitrite Nitrogen	N/A	N/A	N/A	N/A	[A]	
Total Phosphorus	N/A	N/A	N/A	N/A	[A]	[B]
	Minimum		Maximum			
pH	7.0	N/A	9.3	N/A	4	

[A] Under the current NPDES permit, the Shipyard is considered an industrial facility and sampling for these parameters was not required. Per a telephone communication between Dave Ragsdale, EPA Region X, and Matt Jabloner, Water Program Manager, Puget Sound Naval Shipyard, dated 19 Nov 97, three years of sampling under the current NPDES permit has sufficiently characterized the Shipyard storm water discharges. Mr. Ragsdale concurred that limited additional sampling for purposes of this application would not add to the knowledge base about the quality of those discharges and storm water sampling results obtained during the current permit would be sufficient for purposes of this application.

[B] Sources of this pollutant (detergents, boiler waters, fertilizers, body wastes, food residues) are not discharged into this outfall.

Part B - List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Arsenic	5.5 µg/L	N/A	1.1 µg/L	N/A	5	Treated wood, vessel disposal operations
Cadmium	6 µg/L	N/A	2.42 µg/L	N/A	5	Paint
Chromium	200 µg/L	N/A	50.2 µg/L	N/A	5	Vessel disposal operations
Copper	1300 µg/L	N/A	521 µg/L	N/A	5	Vessel disposal operations
Lead	350 µg/L	N/A	174.2 µg/L	N/A	5	Vessel disposal operations, past practices*
Mercury	Not detected	N/A	Not detected	N/A	5	
Nickel	1500 µg/L	N/A	446.8 µg/L	N/A	5	Vessel disposal operations
Zinc	880 µg/L	N/A	450 µg/L	N/A	5	Vessel disposal operations

* In the past, raw lead used for ballast and shielding was stored outdoors, exposed to storm water

Part C - List each pollutant shown in Tables 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		

Part D - Provide data for the storm events which resulted in the maximum values for the flow weighted composite sample.

Note: Flow weighted composite samples were not required by the Shipyards NPDES permit. Specific rainfall event information is available if requested.

Revised

VII. Discharge Information (Continued from page 3 of Form 2F) for Outfall 028

Part A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Oil and Grease	N/A	N/A	N/A	N/A	N/A	
TPH	3.5 mg/L	N/A	1.7 mg/L	N/A	3	Vehicles and equipment
Biological Oxygen Demand (BOD5)	Not detected	N/A	Not detected	N/A	2	Organic matter
Chemical Oxygen Demand (COD)	390 mg/L	N/A	156 mg/L	N/A	3	Organic matter
Total Suspended Solids (TSS)	130 mg/L	N/A	59.7 mg/L	N/A	3	Suspended matter in urface runoff
Total Kjeldahl Nitrogen	N/A	N/A	N/A	N/A	[A]	
Nitrate plus Nitrite Nitrogen	N/A	N/A	N/A	N/A	[A]	
Total Phosphorus	N/A	N/A	N/A	N/A	[A]	[B]
	Minimum		Maximum			
pH	7.5	N/A	7.7	N/A	3	

[A] Under the current NPDES permit, the Shipyard is considered an industrial facility and sampling for these parameters was not required. Per a telephone communication between Dave Ragsdale, EPA Region X, and Matt Jabloner, Water Program Manager, Puget Sound Naval Shipyard, dated 19 Nov 97, three years of sampling under the current NPDES permit has sufficiently characterized the Shipyard storm water discharges. Mr. Ragsdale concurred that limited additional sampling for purposes of this application would not add to the knowledge base about the quality of those discharges and storm water sampling results obtained during the current permit would be sufficient for purposes of this application.

[B] Sources of this pollutant (detergents, boiler waters, fertilizers, body wastes, food residues) are not discharged into this outfall.

Part B - List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Arsenic	12 µg/L	N/A	7.65 µg/L	N/A	2	Treated wood, vessel disposal operations
Cadmium	1.9 µg/L	N/A	1.9 µg/L	N/A	2	Paint
Chromium	47 µg/L	N/A	33.5 µg/L	N/A	2	Vessel disposal operations
Copper	420 µg/L	N/A	290 µg/L	N/A	2	Vessel disposal operations
Lead	240 µg/L	N/A	149 µg/L	N/A	2	Vessel disposal operations, past practices[A]
Mercury	0.39 µg/L	N/A	0.39 µg/L	N/A	2	Past practices[B]
Nickel	160 µg/L	N/A	102 µg/L	N/A	2	Vessel disposal operations
Zinc	610 µg/L	N/A	440 µg/L	N/A	2	Galvanized buildings, vessel disposal operations
PCB-1260	4.7 µg/L	N/A	1.6 µg/L	N/A	3	Vessel disposal operations
Di-n-butylphthalate	14 µg/L	N/A	7.4 µg/L	N/A	3	Analyte was also found in method blank during one analysis
Bis (2-ethylhexyl) phthalate	1,738 µg/L	N/A	588.3 µg/L	N/A	3	Liquid used in vacuum pumps

[A] In the past, raw lead used for ballast and shielding was stored outdoors, exposed to storm water.

[B] Mercury has been identified under the floor of Building 431. It may be entering the outfall through ground water infilteration.

Revised

Part C - List each pollutant shown in Tables 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		

Part D - Provide data for the storm events which resulted in the maximum values for the flow weighted composite sample.

Note: Flow weighted composite samples were not required by the Shipyards NPDES permit. Specific rainfall event information is available if requested.

Revised

VII. Discharge Information (Continued from page 3 of Form 2F) for Outfall 030

Part A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Oil and Grease	N/A	N/A	N/A	N/A	[A]	
Biological Oxygen Demand (BOD5)	N/A	N/A	N/A	N/A	[A]	
Chemical Oxygen Demand (COD)	N/A	N/A	N/A	N/A	[A]	
Total Suspended Solids (TSS)	155 mg/L	NA	126 mg/L	NA	1	Suspended matter in surface runoff
Total Kjeldahl Nitrogen	N/A	N/A	N/A	N/A	[A]	
Nitrate plus Nitrite Nitrogen	N/A	N/A	N/A	N/A	[A]	
Total Phosphorus	N/A	N/A	N/A	N/A	[A]	[B]
pH	Minimum	Maximum	Minimum	Maximum	[A]	

[A] Under the current NPDES permit, the Shipyard is considered an industrial facility and sampling for these parameters was not required. Per a telephone communication between Dave Ragsdale, EPA Region X, and Matt Jabloner, Water Program Manager, Puget Sound Naval Shipyard, dated 19 Nov 97, three years of sampling under the current NPDES permit has sufficiently characterized the Shipyard storm water discharges. Mr. Ragsdale concurred that limited additional sampling for purposes of this application would not add to the knowledge base about the quality of those discharges and storm water sampling results obtained during the current permit would be sufficient for purposes of this application.

[B] Sources of this pollutant (detergents, boiler waters, fertilizers, body wastes, food residues) are not discharged into this outfall.

Part B - List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Arsenic	140 µg/L	N/A	28.9 µg/L	N/A	4	Treated wood, vessel disposal operations
Cadmium	135 µg/L	N/A	27.6 µg/L	N/A	4	Paint
Chromium	87 µg/L	N/A	34.5 µg/L	N/A	4	Treated wood, plating addative
Copper	4150 µg/L	N/A	873.5 µg/L	N/A	4	Treated wood, electroplating
Lead	2740 µg/L	N/A	713.1 µg/L	N/A	4	Past practices (old battery shop)
Mercury	0.8 µg/L	N/A	0.15 µg/L	N/A	4	Past practices
Nickel	1070 µg/L	N/A	259.6 µg/L	N/A	4	Electroplating
Zinc	18500 µg/L	N/A	4045.9 µg/L	N/A	4	Treated wood, zinc plating operations
Cyanide	Not detected	N/A	Not detected	N/A	4	

Revised

Part C - List each pollutant shown in Tables 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Gasoline	64 µg/L	NA	64 µg/L	NA	1	Vehicles and equipment
Diesel	1328 µg/L	NA	954.3 µg/L	NA	1	Vehicles and equipment
Aluminum	3670 µg/L	NA	1933 µg/L	NA	1	Exposed staging and equipment
Antimony	36.5 µg/L	NA	14.8 µg/L	NA	1	Old battery shop (antimonial lead)
Barium	1990 µg/L	NA	749 µg/L	NA	1	Paint
Cobalt	69.9 µg/L	NA	23.3 µg/L	NA	1	High-tempature alloys, high-speed toolsn
Iron	19900 µg/L	NA	8908 µg/L	NA	1	Vessel disposal operations
Magnesium	3180 µg/L	NA	2276 µg/L	NA	1	Present in seawater (1,445mg/L)
Manganese	1030 µg/L	NA	492.06 µg/L	NA	1	Background
Selenium	1.2 µg/L	NA	0.24 µg/L	NA	1	Vessel recycling operations.
Vanadium	10.9 µg/L	NA	4.2 µg/L	NA	1	Copper and steel alloy. Bonding material in cladding.
2-Methylphenol	2 µg/L	NA	1 µg/L	NA	1	Solvent, phenolic resin
4-Methylphenol	10 µg/L	NA	3.33 µg/L	NA	1	Solvent, phenolic resin
2,4-Dimethylphenol	1 µg/L	NA	0.33 µg/L	NA	1	Solvent, plasticizer. additive to lubricant and gasoline.
Diethylphthalate	1 µg/L	NA	0.67 µg/L	NA	1	Solvent, plasticizer
Di-n-butylphthalate	28 µg/L	NA	10 µg/L	NA	1	Plasticizer, resin solvent.
Butylbenzylphthalate	2 µg/L	NA	1.33 µg/L	NA	1	Plasticizer used in resins.
bis (2-Ethylhexyl) phthalate	25 µg/L	NA	13.7 µg/L	NA	1	Liquid used in vacuum pumps.
Di-n-octylphthalate	12 µg/L	NA	4.67 µg/L	NA	1	Plasticizer for resins and elastomers.
Acetone	32 µg/L	NA	21 µg/L	NA	1	Paint, varnish, and solvent
2-Butanone	11 µg/L	NA	6.2 µg/L	NA	1	Solvent
Toluene	7.8 µg/L	NA	5.23 µg/L	NA	1	Solvent
Xylene	1.1 µg/L	NA	0.73 µg/L	NA	1	Solvent
Chloroform	1.2 µg/L	NA	0.4 µg/L	NA	1	Solvent

Part D - Provide data for the storm events which resulted in the maximum values for the flow weighted composite sample.

Note: Flow weighted composite samples were not required by the Shipyards NPDES permit. Specific rainfall event information is available if requested.

Revised

VII. Discharge Information (Continued from page 3 of Form 2F) for Outfall 040

Part A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Oil and Grease	N/A	N/A	N/A	N/A	N/A	
TPH	26 mg/L	N/A	7.2 mg/L	N/A	4	Vehicles and equipment
Biological Oxygen Demand (BOD5)	13 mg/L	N/A	4.3 mg/L	N/A	3	Organic matter
Chemical Oxygen Demand (COD)	86 mg/L	N/A	25.5 mg/L	N/A	4	Organic matter
Total Suspended Solids (TSS)	210 mg/L	N/A	82.23 mg/L	N/A	4	Suspended matter in surface runoff
Total Kjeldahl Nitrogen	N/A	N/A	N/A	N/A	A	
Nitrate plus Nitrite Nitrogen	N/A	N/A	N/A	N/A	A	
Total Phosphorus	N/A	N/A	N/A	N/A	A	B
	Minimum		Maximum			
pH	7.3	N/A	7.7	N/A	4	

A Under the current NPDES permit, the Shipyard is considered an industrial facility and sampling for these parameters was not required. Per a telephone communication between Dave Ragsdale, EPA Region X, and Matt Jabloner, Water Program Manager, Puget Sound Naval Shipyard, dated 19 Nov 97, three years of sampling under the current NPDES permit has sufficiently characterized the Shipyard storm water discharges. Mr. Ragsdale concurred that limited additional sampling for purposes of this application would not add to the knowledge base about the quality of those discharges and storm water sampling results obtained during the current permit would be sufficient for purposes of this application.

B Sources of this pollutant (detergents, boiler waters, fertilizers, body wastes, food residues) are not discharged into this outfall.

Part B - List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Arsenic	13 µg/L	N/A	2.23 µg/L	N/A	4	Past practices* and surface runoff
Cadmium	367 µg/L	N/A	75.33 µg/L	N/A	4	Past practices* and surface runoff
Chromium	36 µg/L	N/A	14.54 µg/L	N/A	4	Past practices* and surface runoff
Copper	3240 µg/	N/A	1035.86 µg/L	N/A	4	Past practices* and surface runoff
Lead	9610 µg/L	N/A	1587.25 µg/L	N/A	4	Past practices* and surface runoff
Mercury	0.67 µg/L	N/A	.087 µg/L	N/A	4	Past practices* and surface runoff
Nickel	10900 µg/L	N/A	1665.5 µg/L	N/A	4	Past practices* and surface runoff
Zinc	23900 µg/L	N/A	5359 µg/L	N/A	4	Past practices* and surface runoff

* This outfall drains an area of Installation Restoration Site 10 west. Some of the pollutants in this outfall may have migrated from fill materials surrounding this storm sewer system.

Revised

Part C - List each pollutant shown in Tables 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Aluminum	1190 µg/L	NA	645 µg/L	NA	1	Past practices* and surface runoff
Barium	2680 µg/L	NA	1231 µg/L	NA	1	Past practices* and surface runoff
Iron	28600 µg/L	NA	14061 µg/L	NA	1	Past practices* and surface runoff
Magnesium	35800 µg/L	NA	8490 µg/L	NA	1	Present in seawater (approximately 1,445 mg/L).
Manganese	2010 µg/L	NA	1052 µg/L	NA	1	Background
Antimony	119 µG/l	NA	34.3 µG/l	NA	1	Past practices* and surface runoff
Beryllium	0.4 µg/L	NA	0.2 µg/L	NA	1	Past practices* and surface runoff
Cobalt	74.9	NA	30.1 µg/L	NA	1	Past practices* and surface runoff
Phenanthrene	2 µg/L	NA	1 µg/L	NA	1	Past practices* and surface runoff
Fluoranthene	2 µg/L	NA	1 µg/L	NA	1	Past practices* and surface runoff
Pyrene	2 µg/L	NA	1 µg/L	NA	1	Past practices* and surface runoff
Chrysene	1 µg/L	NA	0.5 µg/L	NA	1	Past practices* and surface runoff
Bis(2-ethylhexyl) phthalate	5 µg/L	NA	3.5 µg/L	NA	1	Past practices* and surface runoff
Di-n-octylphthalate	1 µg/L	NA	0.5 µg/L	NA	1	Past practices* and surface runoff
Benzo (a) pyrene	0.8 µg/L	NA	0.4 µg/L	NA	1	Past practices* and surface runoff
Acetone	26 µg/L	NA	14.6 µg/L	NA	1	Past practices* and surface runoff
Chloroform	5.7 µg/L	NA	5.15 µg/L	NA	1	Past practices* and surface runoff
Bromodichloromethane	0.86 µg/L	NA	0.77 µg/L	NA	1	Past practices* and surface runoff
Dibromochloromethane	0.36 µf/L	NA	0.18 µg/L	NA	1	Past practices* and surface runoff
Bromoform	0.52 µg/L	NA	0.26 µg/L	NA	1	Past practices* and surface runoff

* This outfall drains an area of Installation Restoration Site 10 west. Some of the pollutants in this outfall may have migrated from fill materials surrounding this storm sewer system.

Part D - Provide data for the storm events which resulted in the maximum values for the flow weighted composite sample.

Note: Flow weighted composite samples were not required by the Shipyards NPDES permit. Specific rainfall event information is available if requested.

Revised